PETROCHINA COMPANY LIMITED 2020 ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

PetroChina

2020

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

MIX
Paper from responsible sources
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ABOUT THIS REPORT

This report illustrates activities the Company undertook in 2020 pursuant to its ongoing commitment to advance the community, the economy and the environment, with the time span ranging from January 1, 2020 to December 31, 2020. For continuity and comparability, this report provides explanations on past and future initiatives on certain issues. All information disclosed in this report was sourced from PetroChina's official documents and statistics as well as statistics gathered from the Company's affiliated enterprises. It takes into account the Company's development priorities and stakeholder concerns. The relevant data of the report covers the Company and its wholly-owned and holding subsidiaries. All information has been reviewed in accordance with the Company's *Rules for Information Disclosure Control and Disclosure Procedures*. This report has been reviewed and approved by the Board on March 24, 2021.

This report includes a set of Forward-Looking Statements. Excluding historical facts, all events that may or will occur (including, but not limited to, premise, objectives, estimation and business plans) and descriptions of such events are categorized as Forward-Looking Statements. Due to the presence of external uncertainties, actual outcomes or the future climate may differ from those expressed in the Forward-Looking Statements. As the Forward-Looking Statements were made prior to December 31, 2020, PetroChina holds no responsibility or liability for any modifications made subsequent to the said date.

This report is published in simplified Chinese, traditional Chinese and English. In the case of any discrepancy, the version in simplified Chinese shall act as the lead publication. As a member of the United Nations Global Compact (UNGC), we report our progress in compliance with the Ten Principles and Sustainable Development Goals and will submit the report to be posted on UNGCs website (http://www.unglobalcompact.org).

The Board and all the Company's directors hereby certify that there are no misrepresentations, misleading statements or material omissions in this report. Furthermore, we jointly and severally accept full responsibility for the truthfulness, accuracy and completeness of this report.

For more information, please see the Company's website www.petrochina.com.cn or download the electronic version of this report.

Note: In 2020, the Company restructured its pipeline business, and sold its major oil and gas pipelines, some gas storage facilities, LNG terminals and initial oil and gas and other related assets to PipeChina. This report does not cover the pipeline company and businesses that have been sold.

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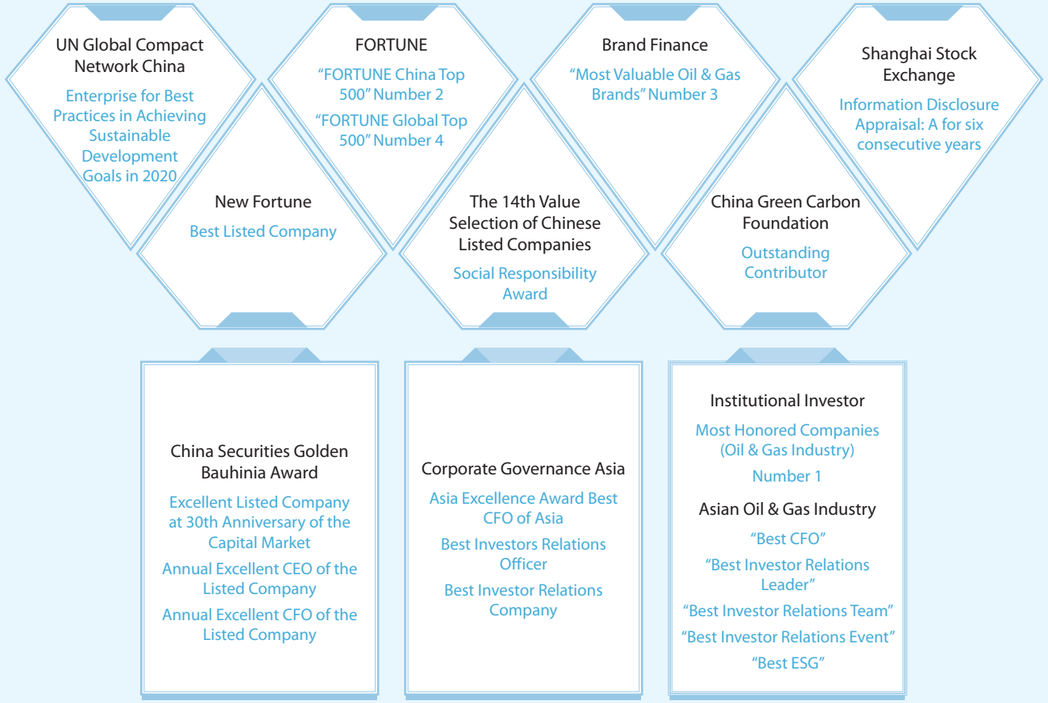
ABOUT US

PetroChina Company Limited (hereinafter referred to as "the Company", "we" or "us") is a joint stock limited company incorporated on November 5, 1999, upon the restructuring of China National Petroleum Corporation (CNPC). PetroChina was listed on the NYSE (ADS code: PTR) and the HKEX (stock code: 857) respectively in April 2000, and on the Shanghai Stock Exchange (stock code: 601857) in November 2007.

PetroChina is one of the major oil and gas producers and distributors in China, and also a significant player in the global oil and gas industry. It engages in a wide range of activities related to oil and natural gas and sustainably provides energy and oil products for economic and social development. We are also committed to building a harmonious relationship between energy, the environment and society.



BUSINESS STRUCTURE

Upstream Business

Exploration, development and production of crude oil and natural gas.

Mid-Downstream Business

Refining, storage and sales of crude oil and oil products, as well as production and marketing of basic, derivative and other chemical products; transportation of natural gas, crude oil and refined oil and distribution of natural gas.

International Business

We are engaged in oil and gas exploration and production in many countries over the world.

Oil and Gas Exploration, Development and Production

PetroChina is at the forefront in domestic oil and gas exploration and development. We operate in a number of major oil and gas producing regions such as Daqing, Changqing, Xinjiang, Liaohe, Tarim and Sichuan. In 2020, we produced 743.8 million barrels of crude oil and 3,993.8 billion cubic feet of saleable natural gas domestically. The Company's domestic and overseas output totalled 1,625.5 million barrels of oil equivalent in the year.

Refining, Storage and Sales of Crude Oil and Oil Products

We own 13 ten-million-ton-level refining bases. In 2020, we processed 1,177.5 million barrels of crude oil and produced 107.042 million tons of refined oil. We are operating more than 20,000 service (gas) stations, covering 31 provinces (municipalities and autonomous regions) and the Hong Kong SAR of China.

Production and Sales of Petrochemical Products

The Company is engaged in producing six categories of chemical products: synthetic resin, synthetic fiber and raw materials of synthetic fiber, synthetic rubber, urea, organic and inorganic compounds with thousands of trademarked products. Our production capabilities of products such as ethylene, synthetic resin and synthetic rubber are ranked among the best in China. In 2020, we produced 28.853 million tons of chemical products and 6.345 million tons of ethylene.

Transportation of Natural Gas, Crude Oil and Refined Oil, and Distribution of Natural Gas

PetroChina is engaged in the transportation and marketing of natural gas, and storage and transportation of crude oil and refined oil.

International Oil and Gas Cooperation

Currently, we have formed five international oil and gas cooperation zones in Central Asia - Russia, Middle East, Africa, the Americas and the Asia-Pacific, and three oil and gas operation centers in Asia, Europe and the Americas. The expansion and growth of our international oil and gas cooperation has been substantial in terms of size and scope, with operational quality improving greatly. In 2020, our overseas oil and gas production reached 215.8 million barrels of oil equivalent.

PETROCHINA AND THE 2030 SUSTAINABLE DEVELOPMENT GOALS OF THE UN

Sustainable Development Goals of the UN	Action and Performances
1 No Poverty	• During the "13th Five-Year Plan" (2016-2020) period, cooperating with CNPC to implement more than 2,800 projects for 1,175 villages, helping all such regions to get rid of poverty • Awarded by the United Nations Global Compact the honor of "Enterprise for Best Practices in Achieving Sustainable Development Goals in 2020 (Eradicating Poverty and Promoting Prosperity)" • Won the "National Poverty Alleviation Award Organization Innovation Award"
2 Zero Hunger	• Focusing on assuring the rural poor population's food and clothing needs and guaranteeing their access to compulsory education, basic medical services, and safe housing, carrying out road construction, environmental rehabilitation, safe drinking water and other poverty alleviation projects, facilitating the sustainable development of local characteristic industries
3 Good Health and Well-being	• Ensuring the occupational health, physical health and mental health of employees • Carrying out special occupational health check and mental health management training • Establishing the teams to maintain mental health for overseas projects and carrying out psychological assessments for 3,000 employees • During the COVID-19 epidemic, opening psychological assistance hotline and providing online consultation through the "Petroleum People Psychology" official account • Achieving a 99.33% screening rate of workplace occupational hazards • Achieving a 99.25% occupational health examination rate for employees facing occupational hazards • Carrying out COVID-19 epidemic prevention and control abroad, establishing overseas epidemic prevention, joint prevention and joint control mechanism, and epidemic prevention and control system, and implementing targeted prevention and control measures • Transshipment and remote treatment for 8 severely sick overseas employees
4 Quality Education	• The implementation of training programs such as Teacher Training Program and Xuhang Program, training more than 7,700 educators and helping 11,400 students in poverty • Paying attention to community education where the business is located, donating school buses to local schools, continuing to repair teaching facilities, providing health training and setting up scholarships to help the locals improve their educational conditions and levels
5 Gender Equality	• Respecting the principle of gender equality and treating employees of different genders equally • Strictly complying with the relevant provisions relating to maternity leave and lactation leave, protecting the rights and interests of female employees
6 Clean Water and Sanitation	• Drilling water wells in 35 villages of Niger to solve the problem of local water shortage
7 Affordable and Clean Energy	• Continuously strengthening the exploration and development of natural gas • Domestic natural gas output representing a year-on-year growth of 9.9% • Importing natural gas resources through multiple channels
8 Decent Work and Economic Growth	• The annual total training time was 14 million study hours with the average training time per person of 40 hours. Training rate of front-line personnel was 100%, and training rate of senior skilled personnel and personnel at critical operation posts was 100% • Promoting the construction of people's livelihood projects to improve the living and working conditions of front-line employees, securing the personal benefits of employees and enabling the income of employees to grow simultaneously with the development of the Company • Fostering local suppliers and contractors during our construction and operation to create more jobs for local people and promote the development of local economy
9 Industry, Innovation, and Infrastructure	• Enabling in-depth implementation of the innovation strategies, strengthening key core technology research to achieve breakthroughs, focusing on the applied basic research and research on advanced technologies, the construction of technical innovation capabilities and talents, the technological cooperation and exchanges and the work on standards, and the protection of technological intellectual property and transformation and application of such achievement etc.
10 Reducing Inequality	• No child employment and forced labor • No form of discrimination in gender, region, religion, nationality, etc.
11 Sustainable Cities and Communities	• Improving infrastructure in poverty-stricken areas, developing characteristic industries to promote local economic and social development • Contributing to the Battle for Blue Skies, installing gas-use facilities for 420,000 households in Hebei and Shandong provinces, benefiting nearly 2 million people
12 Responsible Consumption and Production	• Strictly monitoring and controlling discharge of wastes and pollutants generated from production process • Reducing discharge of pollutants into air, earth and water and realizing a continuous reduction of major pollutants • Achieving an energy-saving amount of 760,000 tons of standard coal • Contributing to the "Battle for Clean Land" was praised by the Ministry of Ecology and Environment
13 Climate Action	• Accelerating major and special science and technology projects of "Research and Application of Key Technologies for Low Carbon and Clean Development" and promoting implementation of key scientific and technological projects, such as "Key Technology and Application of CO_2 Capture, Utilization and Storage (CCUS)", "Key Technology Demonstration Project for CCUS", forming 18 key technologies and complete sets of technologies, establishing 16 demonstration projects and 9 demonstration areas and improving the low-carbon standard system • Deeply involved in various work of Oil and Gas Climate Initiative (OGCI)
14 Life Below Water	• Adhering to the environmental protection philosophy of clean development, launching the acquisition plan for environmental features, continually carrying out environmental control and monitoring project to protect the ecological environments and biological diversity in the business locations
15 Life On Land	• Strictly complying with local environmental protection policies and laws and regulations governing the trading of animals and plants, and paying attention to the protection of local rare species
16 Peace, Justice, and Strong Institutions	• Abiding by business ethics, adhering to the principles of honesty and trustworthiness, equal consultation, mutual benefit, promoting "Sunshine Trading" and striving to maintain fair and just competition order in business activities
17 Partnerships	• Strengthening the ESG management of supply chain • Publishing "China CCUS Commercialization White Paper" • Organizing 9 roundtable forums on transportation emission reduction

MESSAGE FROM THE CHAIRMAN

Thank you for reading this report as well as for your support to PetroChina over time.

The year 2020 was an extremely unusual and challenging time. Due to the outbreak of the COVID-19 pandemic, various risks and conflicts were aggravated and intertwined, such as the deep economic recession, plummeting oil prices, sharp shrinking of oil and gas demand, intensified geopolitical instabilities and COVID-19's adverse impact on overseas markets. All these had an unprecedented impact on the company's business operations. PetroChina endeavored to seek opportunities and countermeasures amid all of these challenges, and make effective performance in epidemic prevention and control, production resumption, business operations, reform and innovation and other aspects. With such efforts, the Company achieved unusual operating results in an unusual year. Our better-than-expected operating results were a satisfactory accomplishment and a step forward on the way to building a top-class international energy company.

We maintained a stronger transformation momentum by implementing the green low-carbon strategy. Grasping the opportunities arising out of the low-carbon transition in the energy industry, PetroChina established a leading group with regard to new energy and new material business development. We strive to build a "Low-Carbon Energy Ecosystem" fully integrating fossil energy and clean energy, through measures such as planning eco-friendly industries, exploring new low-carbon business models, enhancing resource and energy efficiency, and promoting the green and clean replacement of our own energy consumption. We aim for achieving carbon emissions peak around 2025 and "near-zero" emissions around 2050, thus contributing to China's efforts to have CO_2 emissions peak before 2030 and carbon neutrality before 2060, as well as to the global climate target. In 2020, PetroChina produced 4,221 billion cubic feet of marketable natural gas, up 8% year-on-year, of which domestic output accounted for 3,993.8 billion cubic feet, an increase of 9.9% year-on-year. Such growth represented major progress in the Company's green and low-carbon transformation. Adhering to the concept of "Clean Waters and Lush Mountains are Invaluable Assets", we intensified efforts in pollution control, ecological protection and restoration, and emission reduction, and promoted the modernization of our ecological environment management systems and capabilities. The Company set energy-saving and emission-reduction as a major binding target and improved the oil-gas commodity rate and energy utilization efficiency. In 2020, PetroChina reduced its carbon dioxide intensity and emissions of COD, ammonia-nitrogen, sulfur dioxide and nitrogen oxides by 6.32%, 17%, 29%, 28% and 37%, respectively, as compared with 2015. We continued our deep involvement in cooperation projects under the OGCI framework. PetroChina pledged that its carbon emission reduction actions will not be affected by COVID-19 and low oil prices. This represents PetroChina's determination to transform and its unshakable commitment to contribute to global carbon reduction.

PetroChina is committed to green development and energy delivery, facilitating the growth momentum of customers and empowering people to enjoy a better life!

We further consolidated the foundation for sustainable development by comprehensively promoting the modernization of our governance system and capabilities. Optimizing the governance system and enhancing governance capabilities is fundamental for PetroChina to cope with risks and challenges, realize scientific decision-making and safeguard stakeholder interests. Innovation in technology, management and the business model is the ultimate path to address global energy challenges and realize the energy revolution. We pushed forward reforms in systems, supervision, strategy, management and organization, as well as the marketization mechanism and innovation mechanism throughout the Company and accelerated the pace in establishing a governance system that fits our goal of building a top-class international energy company. In 2020, we achieved new progress and breakthroughs in enhancing our innovation capabilities and core competitiveness, as we took innovation as our top priority and critical step, and encouraged the building of an open ecological environment for innovation. We participated in the "4Mt/a coal indirect liquefaction technology innovation, development and industrialization" project, which won the first prize of the National Science and Technology Progress Award. Our other two R&D projects, the "Key technology for efficient development of coalbed methane reserves with complicated geological conditions and its application" and "Packaged technology for catalytic cracked gasoline super-depth hydrodesulfurization-alkene phased controlled transformation", won second prizes of the National Science and Technology Progress Award. We successfully participated in investment in PipeChina and completed the restructuring and transfer of pipeline assets. We took a stake in the Richfit Information Technology Co. Ltd. in the context of accelerating our digitalized and intelligentized enabling transformation, in order to facilitate cost reductions and efficiency improvements, coordinated sharing, constant innovation, risk prediction and control, and smart decision-making throughout the Company.

We took coordinated measures to fight the COVID-19 epidemic, made due contributions to poverty alleviation and fulfilled our commitment to equitable and inclusive development. Facing the unexpected COVID-19 outbreak, PetroChina set up an executive group in a timely manner to arrange tailored and detailed epidemic prevention and control countermeasures on an enduring basis, in coordination with local governments, our employees, partners, communities and clients. We gave top priority to the safety and health of our employees, organized a strong network to fight the epidemic, and intensified psychological counseling and humanistic care. By the end of 2020, no epidemic or infection case was reported in our workplaces. Leveraging its industrial and resource advantages, the Company went all out to secure refined products and gas supplies and made urgent arrangements to produce anti-epidemic supplies. We donated funds and goods to severely affected regions and supplied daily necessities to communities through our service station network. PetroChina's service station at Hongtu Avenue in Wuhan was the only hero gas station in the country that won the title "National Leading Unit in Fighting COVID-19 Epidemic". Overseas, we established joint anti-epidemic mechanisms with local governments and communities and donated anti-epidemic materials to assist neighborhoods in their anti-epidemic efforts. PetroChina, leveraging its industrial, technical and human resources, always takes an active part in the national poverty alleviation campaign. During the "13th Five-Year Plan" period, we joined forces with our parent company to carry out targeted poverty-alleviation activities in 1,175 villages in China to support the government's initiative. PetroChina paid taxes according to local laws, totaling RMB 23.8 billion overseas. Meanwhile, the Company continued to implement a series of projects to support local communities. As a result of its efforts in poverty alleviation and empowering women, PetroChina was honored with the "2020 Best Practice for Corporate Achieving the Sustainable Development Goals (Eradicating Poverty and Promoting Prosperity)" award by the UN Global Compact and was granted the "National Poverty Alleviation Organization Innovation Award" by the Chinese government.

In the year to come, given the complex and difficult situation, with accelerating energy transition and the profound adjustment of the energy supply-demand pattern, PetroChina will have to shoulder greater responsibilities and face more challenges as well as more opportunities. We will implement our strategies with respect to innovation, resources, markets, internationalization and green and low-carbon, towards the goal of building a top-class international energy company on a quality-based pathway. While focusing on core business, reform and innovation, quality and profitability, and corporate governance, we will also seize the opportunities for low-carbon transformation, accelerate the process of building up new advantages in green development and contribute to the UN Sustainable Development Goals 2030, creating and sharing a bright future with all of our stakeholders.

Dai Houliang
Chairman of the Board

CORPORATE GOVERNANCE

At PetroChina, we always advocate the modern concept of corporate governance characterized by the supremacy of law, reciprocity of power and responsibility, procedural compliance, credibility and integrity, justice and impartiality. Taking rule of law as the principle, we enhanced our capability of business management. Taking the Articles of Association as the guideline, we improved our corporate governance system and the scheme of business management, focusing on formulating systematic, scientific and effective internal rules and regulations. Taking compliance as a key issue, we set a code of behavior for both the company and employees. Disciplined by such rules and regulations, we strive to achieve the modernization and internationalization of the corporate governance system and control system. We are set to make relentless efforts to explore and enhance the rationality and practicality of our corporate governance and improve the long-term mechanism which aims at running our business in compliance with the law.

SUSTAINABILITY MANAGEMENT

To promote sustainable development, which we consistently advocate, we must deliver clean, reliable and affordable energy to the public in a responsible, sustainable and ethical manner, abide by laws and regulations, respect human rights, protect the environment and make contributions to the economic and social development of the locations with our business presence. We embrace the *United Nations Universal Declaration of Human Rights (UDHR)* and a number of codes of voluntary compliance, including but not limited to the United Nations Global Compact (UNGC) and the United Nations Sustainable Development Goals (SDGs) 2030.

We guide and manage the efforts in respect of sustainable development through the work of the Shareholders' General Meetings, the Board of Directors and its special committees, the Supervisory Committee, and the management team led by the President. The philosophy of sustainability is deeply integrated in the entire process of our business operation for effective control of environmental, safety and social risks. Safety and environmental protection, energy conservation and emission reduction are included in the annual performance assessment of the Company's management. If the assessment indicators are not completed, the performance score will be deducted and the compensation and salaries will be deducted according to the regulations. Among them, for those who fail to complete the safety and environmental protection assessment indicators, 5 points will be deducted for each item; for those who fail to complete the energy conservation and emission reduction assessment indicators, 1 point will be deducted for each item, with a maximum of 10 points.

Statement of the Board of Directors on the Management of ESG Affairs of the Company

The Company's Board of Directors attaches great importance to sustainable development management. The Company has established an effective sustainable development management mechanism and has formed a sustainable development governance structure featuring clear hierachy and labor division.

The board of directors identifies, evaluates and manages important sustainable development matters related to the Company's business and regularly follows reports from management and related committees. The Board of Directors adheres to and reviews the Company's "Environmental, Social and Governance Report" annually, and supervises the implementation progress against the related ESG targets.

The Board of Directors upgraded the Health, Safety and Environment (HSE) Committee to the Sustainable Development Committee, which is responsible for supervising and managing matters in relation to the sustainable development of the Company (including but not limited to matters on environmental, social, and governance), and proposing recommendations to the Board of Directors and the President; supervising the effective implementation of the Company's health, safety and environmental protection plan; making recommendations to the Board of Directors or the president on major decisions regarding health, safety and environmental protection; enquiring about major incidents and liabilities, inspecting and urging the resolution of major incidents.

In 2020, we focused on "high-quality development" and continuously improved our sustainable development capabilities.

Incorporating green and low-carbon into the Company's "14th Five-Year Plan" development strategy, and vigorously developing clean and low-carbon energy	Starting the research and formulation of the green development action plan, as well as green and low-carbon development plan	Establishing a new energy and new material business development leading group led by the Chairman to strengthen new energy development strategies and plan research and formulating work	Researching and demonstrating the Company's timetable for achieving carbon peak and "near-zero" emissions path	Establishing management discussion system for ecological and environmental protection	Abiding by business ethics, caring for employees and committing to make greater contributions to society

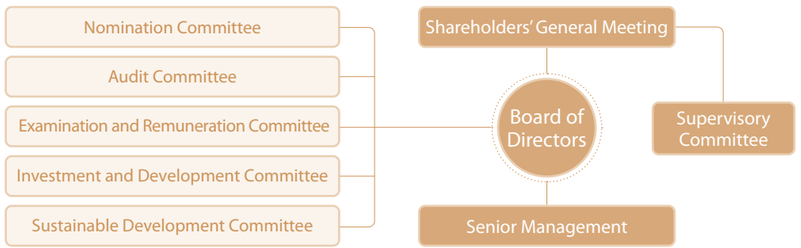
GOVERNANCE FRAMEWORK

Ever since its incorporation, PetroChina has set in place a corporate governance framework in compliance with regulatory requirements and international practice, and such a framework has been improving from time to time by taking into account the actual operating circumstances in order to promote a continuous improvement in the standard of governance. The governance framework is constituted by the Shareholders' General Meeting, the Board of Directors and its special committees, the Supervisory Committee, and senior management headed by the President under which their respective authorities and responsibilities have been clearly defined. Such a management structure allows for close coordination and is highly effective.

We optimize the legitimate decision-making mechanism in keeping with laws and regulatory requirements, enhancing assessment of such a mechanism, setting up and improving the retrospective and lifelong accountability system of decision-making. We keep on improving monitoring and checking exercising of power, and following the principle of consistency of power and responsibility. We clearly delineated the limits of authority at different levels and set out a list of duties and powers. We made well-coordinated use of internal monitoring resources of legal affairs, internal control, auditing and internal inspection. We reinforced self-monitoring by means of double checking by dedicated departments and cross checking between superior and subordinate departments. We receive social supervision voluntarily to procure well-grounded decision making, appropriate authorization, well-controlled exercise of power and disciplinary action against any abuse of power.

The governance system of the Company meets the requirement of the *Company Law of the People's Republic of China* ("Company Law"), the relevant provisions of the China Securities Regulatory Commission, the regulatory requirements of stock exchanges where the Company is listed and the *Articles of Association of PetroChina* ("Articles of Association").

Corporate Governance Structure



Shareholders and Shareholders' General Meeting

The Shareholders' General Meeting is the highest authority in the Company, exercising functions and powers in accordance with the law. PetroChina's Shareholders' General Meeting is held annually to ensure that all shareholders enjoy equal status and exercise their rights effectively. In order to ensure fair and reasonable connected transactions, in voting on resolutions concerning connected transactions, CNPC, being a connected shareholder of the Company, will abstain from voting.

The shareholding structure of the Company is detailed in our annual report for 2020.

In 2020, PetroChina held the Shareholders' General Meeting four times and approved a total of 14 proposals. For details, please refer to the announcement on our website.

Our independent directors perform their duties with diligence, loyalty and independence. With a proper understanding of the business status, financial performance and major projects of the Company, they effectively exercise their special powers for approving major connected transactions, and provide advice for the operation of the Board and the business development of the Company by making use of their professional knowledge and rich experience of their respective field and experience.

In 2020, with the impact of COVID-19 epidemic, independent directors actively learned about the Company's operating status, financial performance and major projects through emails, letters and meetings attended through video connection:

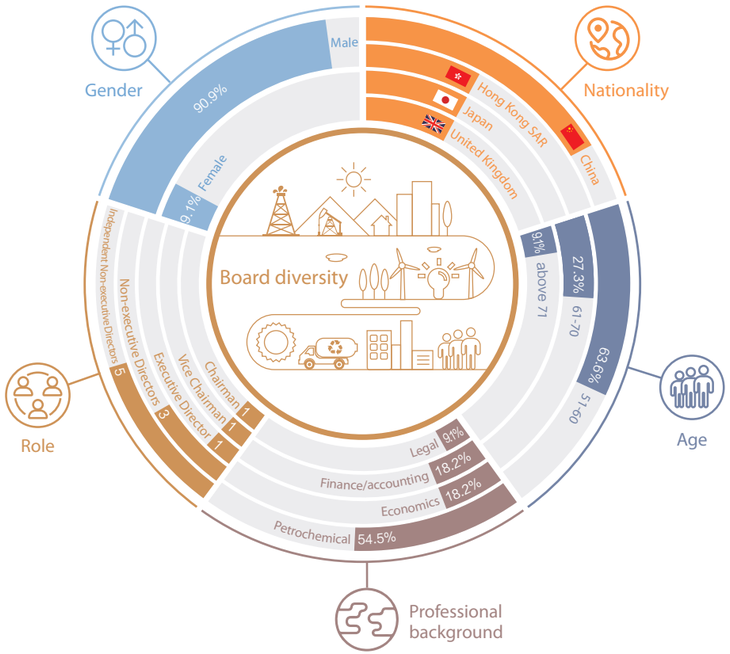
- Issued four opinion reports successively and put forward relevant opinions, suggestions and questions on pipeline restructuring transactions and connected transactions; held six special exchange meetings with the Company's Vice Chairman, senior management and some functional departments on pipeline asset restructuring, updating caps of continuing connected transactions and the Company's 2021 investment plan.
- Together with the Company's managements, regularly communicated to understand the concerns and demands of stakeholders such as regulators, investors, media and public and maintained the rights and interests of minority shareholders.

Directors, Board of Directors and Board Special Committees

The directors are elected by the Shareholders' General Meeting and accountable to the shareholders of the Company. The term of office is three years, renewable at the end of the term upon re-election and re-appointment. Directors act in the interest of shareholders as a whole, strictly adhere to the principle of diligence, integrity and pragmatism, and conscientiously perform their duties. Currently, the Company has 11 directors, including five independent non-executive directors.

The Company formulated the *Diversification Policy of the Composition of the Board of Directors*, so that Board members are engaged based on the actual situation, operational model and work requirements of the Company, while taking into account their nationality, gender, age, cultural and educational background and professional experience. This can help improve the decision-making capabilities of the Company. For details of Board members, please refer to our website and our annual report for 2020.

The Board of Directors sets up a Nomination Committee, Audit Committee, Examination and Remuneration Committee, Investment and Development Committee, and Sustainable Development Committee, all of which provide support to the Board of Directors in its decision-making (The composition, division and the work of each of such committees are detailed in the annual report of the Company for 2020). Based on the needs of our work, we have formulated, improved and effectively implemented the work rules and procedures of the Board of Directors and its special committees.



A total of nine Board meetings were held in 2020, as detailed in our website and our annual report for 2020.

For details of the attendance by independent directors at the Board meetings, please refer to our annual report for 2020.

Supervisors and Supervisory Committee

The term of office of our supervisors is three years, renewable at the end of the term upon re-election and re-appointment. No supervisor may concurrently hold the position of a director, President, Vice President or Chief Financial Officer. In accordance with the Company Law and the Articles of Association, the supervisors shall attend meetings of the Supervisory Committee and sit in on Board meetings on a non-voting basis. They shall report to the Shareholders' General Meeting, submit the Supervisory Committee's work reports and relevant proposals. By the end of 2020, the Company's Supervisory Committee consisted of 9 supervisors, 4 of which were employee representatives.

The Supervisory Committee is accountable to the Shareholders' General Meeting. The Supervisory Committee formulated the Organization and Rules of Procedures for the Supervisory Committee and the Rules on Supervisors' Performance of Duties, setting out the manner, content, requirement and standard of appraisal with respect to performance of duties by the supervisors. All supervisors are urged to monitor the Company's finances and the legality and compliance of the directors and senior management of the Company in performing their duties with due diligence. In 2020, the Company held seven Supervisory Committee meetings, forming seventeen resolutions, all of which were in compliance with the provisions of the Company Law of the People's Republic of China and the Articles of Association and were legal and effective.

40 people

Organized a special training for the Supervisors once, discussing about the Company's financial statements, oil and gas reserves evaluation and asset impairment, and the latest financial statements and development trends of international oil companies. A total of 40 people have participated in this training, including 8 of the Company's Supervisors, 4 departments of the headquarters, and 1 regional company.

Executive Body

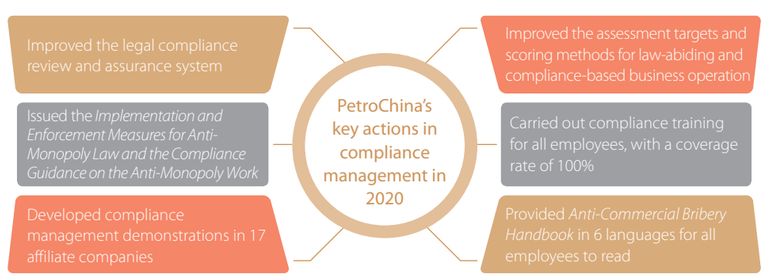
The Company's executive body is headed by the President and is composed of Senior Vice Presidents, Vice Presidents and a CFO. They are appointed by and held accountable to the Board of Directors. They implement Board resolutions and organize the day-to-day production and business activities of the Company in accordance with the Company Law and the Articles of Association of PetroChina on the strength of authorization by the Board of Directors. The major business activities of the Company are detailed on our website.

MANAGEMENT SYSTEM

The Company stresses intensification, specialization and integration and has established a management system where responsibility is commensurate with authority and is scientifically sound, lean, efficient, and vibrant, to strengthen the restrictions on and the supervision of the exercise of power. The Company aims at achieving clear-cut control objectives, effective integration of resources and optimal efficiency and effectiveness in order to promote the improvement of our environmental, social and corporate governance standard and to achieve sustainable growth. The company actively boosts the integration and innovation of the management system and promotes pilot programs for system construction and integration, in order to push forward reform of the management system and optimize resource configuration.

Compliance System

The Company deems adherence to laws and compliance as the strategic and fundamental guarantee for corporate prosperity and high-quality development, insists on the concept of putting adherence to laws



Protecting intellectual property

The Company conducts monthly monitoring and risk assessment of core and key trademarks, and submits trademark applications for registration, annulment, and opposition to the national trademark management department based on the assessment results. Take corresponding rights protection measures against trademark infringement and unfair competition to protect trademark exclusive rights.

and compliance above economic interests and setting out ever more rigorous compliance management system continuously. We also enhance on a continuous basis our compliance demonstration and review of major issues and major decisions and intensify the prevention and control measures against any risks associated with irregularities in order to ensure that both the management and operation are in compliance with rules and regulations according to the law. We have strictly implemented national laws and regulations and government regulatory requirements and strengthened the compliance management in key areas, and the compliance management mechanism of prevention as the primary aim and the combination of punishment and prevention has been fundamentally developed. Therefore, we have seen enhanced compliance awareness among all our staff and an increasingly intense compliance atmosphere in the Company.

Internal Control and Risk Management System

The Company attaches great importance to the construction and supervision of internal control and risk management systems. The Board of Directors and Audit Committee regularly listen to reports on internal control work, organise the identification and assessment of major and significant risks, determine control measures and formulate solutions, and ensure that the Company's internal control system is complete and effective. In 2020, the Company continued to establish and improve the internal control system, strengthened internal control supervision and inspection, and strove to achieve the management and control goal of "strengthening internal control, preventing risks, and promoting compliance". The Company's internal control system has passed an external audit for 15 consecutive years.

In 2020, a total of 124 commercial bribery petition reports were received, and 12 corruption lawsuits were concluded, all of which were solved in accordance with the law and regulations.

Anti-corruption Risk Prevention and Control System

We treat our business partners, customers, suppliers, contractors and counterparts with integrity, respect and equality, oppose any form of commercial bribery and require our business partners to follow the requirements pertaining to the Company's anti-commercial bribery and anti-corruption policies. Leading cadres and employees are not allowed to abuse their position in signing business contracts to carry out illegal activity on PetroChina's platform, or for the benefit of friends or family, or to obtain personal benefits. We abide by the laws, regulations and international conventions such as *Supervision Law of the People's Republic of China* and *United Nations Convention against Corruption*, and strictly enforce various measures including the *Punishment Regulations for Management's Violations and Non-compliance*, *Compliance Management Measures*, *Self-Discipline Convention Applicable to Bidding and Tender Activities*, *Material Supplier Management Measures*, etc., to regulate the behavior of employees and the Company.

We are committed to the main and unwavering value of "strictness" on anti-corruption. We will promote the system and mechanism that makes sure no one dare, can, and is willing to be corrupted, deepen the governance of corruption, and further consolidate and develop an overwhelming victory in the fight against corruption.

In 2020, we

In terms of improving our anti-corruption system and procedures

- Fully demonstrated the function of the building of the Party's working style and probity and anti-corruption team, and promoted the interconnection within supervisory bodies to form a joint force
- Searched for potential risks and possible loopholes in the existing internal control system and work process, and accurately analyzed and evaluated the risk factors of compliance management
- Issued and implemented the *Operation Work Manual of Policy-making System and Supervision System for Three Importances and One Greatness (for trial implementation)*
- Highlighted key areas, and rigorously investigated and dealt with violations of discipline and law, such as abuse of power to transfer benefits to others, and acceptance of bribes

In terms of our anti-bribery training

- Conducted training on compliance knowledge for all employees
- Improved employees' awareness of anti-corruption through learning and watching "Jing Shi Lu" (《警示录》) and an educational video titled "Li Jian Xiao Ge" (《利剑啸歌》)
- Conducted various training, such as on the "Government Affairs Punishment Law" and the "Work Rules for Disciplinary Inspection and Supervision Organs Handling Reports and Accusations"

In terms of strengthening our due diligence and monitoring practices against third party intermediaries/agents

- Implemented professional management and dynamic supervision, implemented strict market entry requirements, real time online assessments and annual evaluation and formed an "entry and exit" (有进有出) mechanism
- Organized and carried out special rectifications on benefit transmission, rent-seeking, and misappropriation of public property into private hands
- Used big data platforms to cross-correlate the corporate information of traders, agents, and suppliers, and identified problems on violations of laws and regulations
- Strengthened the functional application of the joint supervision information system, actively established supervising network

Upholding Business Ethics

We abide by business ethics and market rules, and adhere to the principle of honesty and credibility, equal consultation, mutual benefit and common development, and promote transactions with high business integrity and transparency, in order to maintain fair and impartial competition in our business activities. We strictly comply with the *Anti-monopoly Law of the People's Republic of China*, the *Anti-unfair Competition Law of the People's Republic of China*, the *Supervision Law of the People's Republic of China*, the *UN Guiding Principles on Business and Human Rights* and other applicable laws, regulations and international practices on anti-monopoly, anti-unfair competition, anti-commercial bribery, extortion and fraud. We are against monopolistic acts. We fight against unfair competition in any form and comply with trade restrictions, and never conduct, participate in or support any forms of money laundering.

The continuing connected transactions between the Company and its related parties are governed by the principle of fair, equitable and open pricing. Such transactions will not adversely affect the Company's future financial situation or operating results, nor will they result in any reliance on the related parties or affect the Company's independence. For more details about related party transactions in 2020, please refer to our annual report for 2020.

We have a telephone hotline and an email address for reporting irregularities. The public can report cases of irregularities in real names or anonymously. We will seriously investigate and give feedback in a timely manner, and keep the identity of informants confidential.

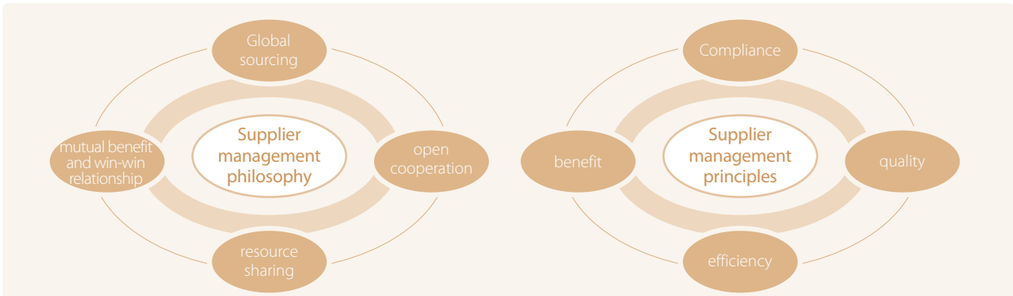
Whistle blowing hotline: 86-10-62094741

Whistle blowing email: jcbjb@petrochina.com.cn

SUPPLY CHAIN MANAGEMENT

We insist on the principle of the supplier management concept of global sourcing, open cooperation, resource sharing, mutual benefit and win-win relationships, and consistent supplier reserve to achieve management in full life cycle and closed loop. We incorporate environmental, quality and occupational health and safety management system certification into our supplier standards. We provide guidance to our suppliers on lawful and ethical business operation, and corporate social responsibility. Suppliers and contractors shall comply with PetroChina's unified quality, environmental, health and safety standards and relevant anti-commercial bribery and anti-corruption policies and regulations, and continue to improve the reliability and environmental sustainability of products and services, and protect the human rights of employees to fulfill demand for personal development.

PetroChina is committed to interconnection and interaction with its suppliers, resorting to various means to understand their concerns and claims via a well-established mechanism for constant communication. For details of the Company's Supply Chain Safety Management Process, please see the Chapter 3, Section 2 of this report.



23,699

There are 23,699 materials suppliers, among which 2,216 are tier 1 manufacturers

98.14%

Tier 1 manufacturers have passed the quality management system certification (ISO9000) with a certification ratio of 98.14%

92.73%

Tier 1 manufacturers have passed the environmental management system certification (ISO14000) with a certification ratio of 92.73%

91.2%

Tier 1 manufacturers have passed Occupational Health and Safety Management System Certification (ISO18000) with a certification ratio of 91.2%

In 2020, we

Improved supplier management systems	• Strengthened the management of the whole process from supplier admission to supplier withdrawal, continued to optimize the resource structure of suppliers, and prioritize access to energy-saving and environmentally friendly products and products with independent intellectual property rights • Strengthened the quality, safety, environmental protection and other aspects of supervision and risk prevention and control for suppliers, and promoted suppliers to be green and low-carbon, valued goodwill, integrity management, and compliance operations
Promoted cooperation with suppliers and established a communication and coordination mechanism	• Expanded the cooperation areas and levels with suppliers, carried out active exchanges in various aspects such as green environmental protection and sustainable development, and opened more avenues for the potential of cooperation • Paid attention to suppliers' health, safety, environmental protection and compliance operations, communicated with suppliers in a timely manner, and improved the standards of coordination in the supply chain
Optimized supplier assessment and promoted supplier performance improvement	• Evaluated 4,223 products from 1,426 first-level material suppliers, with a dynamic quantitative evaluation rate of 100% • Incorporated corporate strength, product innovation, and integrity and compliance into the evaluation system, performed classified and stratified management for suppliers, and applied the evaluation results to the supply chain building
Strengthened due diligence and monitoring of third-party intermediaries/ agents	• Implemented professional management and dynamic supervision, strict market access, online real-time evaluation and annual evaluation, and established and improved the exit mechanism • Used big data platforms to cross-correlate the corporate information of traders, agents, and suppliers, and identified clues to problems • Strengthened the functional application of the joint supervision information system, actively supervised to find clues to problems

COMMUNICATING AND INTERACTING WITH STAKEHOLDERS

Stakeholders' trust and support is fundamental to the building of a sustainable business. We worked hard to enhance the quality and profitability of our development to maximize returns to our shareholders and value for our stakeholders, and to achieve our common goal of harmonious development and mutually beneficial maximization.

Actively performing information disclosure obligations	• Improved management and related systems for the disclosure of key events • Built a multi-level and multi-form mechanism to communicate with stakeholders through periodic reports, results performance announcements, extraordinary reports, media communications, interviews and visits, and interactive communication
Stakeholders consultation	• Responded to investors' questions and suggestions through general meetings, investor hotline, website, new media, teleconferences, email and fax • Responded to criticism and opinions from all walks of life and accept supervision through the Open to Public Day, Gas Station Open Day, press meetings, customer symposiums, customer visits, questionnaires, and suggestion boxes, etc. • Held online conferences, video conferences, and teleconferences to communicate with investors, media, and third-party organizations • Held ESG-related discussions with environmental protection foundations and organizations
Industry participation	• The management actively attended various high-level conferences and forums and delivered speeches, and shared industry experience and professional insights, to improve the media and the public's understanding of the Company

38

Conducted 38 interactions with ESG rating agencies and institutional investors

Case Study PetroChina held a Company Day Event in 2020

In 2020, the Company held a "Company Day" event lasting 40 days.

During the event, each company invited local governments, representatives of the People's Congress, reporters from media, primary and secondary school students, through a combination of online and offline invitations, to learn more about and gain a deeper insight into petroleum.

In July 2020, PetroChina held the cloud opening event at 29 sites in 16 provinces (cities and districts) across the country. The event adopts the form of "cloud live broadcast" to show online to all sectors of society the strategic deployment and practical actions of PetroChina to ensure the supply of natural gas and practice the concept of green development.

Stakeholder	Expectations	Communication Approach	Key Actions
Shareholders	• Standardized corporate governance • Stable business growth • Sustainable development	• Fulfill obligations on statutory information disclosure • Organize non-deal roadshows and other activities • Issue reports and announce operating results on a regular basis	• Operate in a responsible manner to maintain a good reputation • Convene Shareholders' General Meetings • Ensure equal treatment of shareholders, and value the opinions of both small and medium-sized shareholders • Strengthen management over investor relations and hold dialogues with investors and shareholders in various ways
Employees	• Basic rights guaranteed • Career development • Growth in salary, compensation and benefits	• Elect employee representative to join the Supervisory Committee • Establish trade unions at all levels • Convene employee representatives meetings and make reports • Organize employee training programs • Set up a complaints and feedback system	• Enhance employee training and skills development • Organize vocational skill contests • Conduct occupational health checks • Promote local employment in overseas operations • Provide a career development platform for employees • Protect employee safety in overseas operations
Consumers	• Provide safe, environmentally friendly, high-quality products • Constantly improve the quality of services • Operate with integrity	• Carry out activities to protect consumers' interests • Publicize commitment to quality services • Provide hotline services • Conduct customer satisfaction surveys	• Enhance quality management • Improve service quality at refueling stations • Increase the supply of clean fuel, such as natural gas, high-standard gasoline and diesel • Secure oil products supplies for disaster relief and agricultural production • Organize Refueling Station Open Day activity
Business partners	• Fair and transparent procurement • Win-win cooperation	• Hold tendering meetings • Hold large cross-border business negotiations and technical exchange meetings • Use the electronic trading platform • Engage in sharing managerial practices and technical standards • Conduct contract negotiations and routine meetings • Hold training for business partners • Conduct daily operation meetings	• Strengthen centralized procurement management to provide suppliers with equal opportunities • Enhance communication and coordination with contractors and strengthen the HSE management of contractors by creating a safe and healthy working environment • Improve security measures and the emergency response network • Open the investment field • Hold high-level forums
Governments	• Stable energy supply • Harmonious economic and social development • Leading role of brand and technology • Tax payment according to law	• Offer company experience • Pay attention to public concerns and improve corporate behavior • Launch strategic cooperation with relevant departments • Attend seminars and forums	• Behave legally and ethically, and abide by the applicable laws and regulations in the jurisdictions where we operate • Stabilize oil and gas supplies • Participate in discussions organized by the government on climate change, energy conservation and emission reduction • Promote local employment and cultivate local talents • Pay taxes according to law
NGOs	• Improve sustainable management • Perform social responsibilities such as poverty alleviation and environmental protection	• Share the Company's experiences • Participate in NGO activities • Promote international communication	• Submit a progress report to the UN Global Compact (COP) • Pay attention to external concerns through various forms of communication • Play an active role in participating in and supporting international environment and standardization initiatives • Participate in a wide range of forums and conferences
Communities	• Promote employment growth • Protect community environment • Promote economic development in the community • Respect cultural traditions of the community	• Hold dialogues with local communities • Organize community visits • Conduct social and environmental impact assessments of projects • Promote knowledge sharing and education programs • Increase information disclosure	• Participate in disaster relief and reconstruction, and provide financial support for education and poverty alleviation • Support and drive the economic and social development of areas where businesses are located with large projects construction • Supply clean energy, e.g. natural gas, to remote regions • Promote employees to provide voluntary services • Procure locally, where the business is carried out • Provide job opportunities and training for the local community

ENERGY AND THE ENVIRONMENT

The destiny of humankind and nature is intertwined, thus only by observing the law of nature can we avoid pitfalls in the exploitation and utilization of natural resources. We incorporate care for people's lives and environmental protection into our corporate mission. Along with the global trend of energy transition, we make great efforts to develop clean, low-carbon, safe and efficient energy, continuously upgrade the management and control of carbon emissions, and endeavor to build PetroChina into a resource-conserving, environmentally friendly and safety-conscious business.

ENERGY TRANSITION

Economic and population growth is promoting the steady growth of global primary energy demand. Under the combined impact of COVID-19 and climate change, the proportion of fossil fuels in primary energy consumption mix decreases gradually. With the acceleration of energy transition and "electrification", demand for major oil products peaked ahead of schedule. As a clean, low-carbon, safe and efficient energy, natural gas plays an important role in the global energy transition as a transitional source of energy. Natural gas is China's main energy source for achieving energy security, carbon peak and carbon neutrality goals and has broad development prospects.

Opportunities and Challenges

The growth of energy demand encountered a short-term countercurrent. Due to the impact of COVID-19, the global economy has fallen into a deep recession. In 2020, global energy demand dropped by around 5%. It is expected that it will not recover to the pre-epidemic level until at least 2023. Oil and gas will play an important role in the global economic recovery. In the long run, population growth, urbanization and industrialization of developing countries will continue to drive global energy demand and consumption growth.

The energy transition helps to achieve the "Carbon peak, carbon neutrality" goal. The electric revolution, market revolution, digital revolution and green revolution in the energy industry are in the ascendant. The trend of clean fossil fuels, large-scale clean energy, multi energy integration and re-electrification of end energy is accelerating. The transformation of the energy mix to green and low-carbon has become a global consensus. The International Energy Agency (*IEA*) predicts that from 2020 to 2030, the demand for renewable energy power will increase by 2/3, accounting for about 80% of the increase in global electricity demand. Low-carbon energy and its efficiency improvement will help many countries and energy companies achieve the goal of net zero carbon dioxide emissions by the middle of this century.

Inequality in energy access remains prominent. There are more than 1.2 billion people around the world that still do not have access to affordable modern energy and a large number of developing countries are still using high pollution and high carbon energy. Helping this group to obtain equal access to clean, low-carbon and affordable energy is not only a requirement for achieving the Sustainable Development Goals (*SDGs*) of the United Nations, but also a key part of achieving global temperature control goals.

China's clean and low-carbon energy system construction speed-up. China is committed to achieve a peak in carbon dioxide emissions by 2030 and to strive to realize carbon neutrality by 2060. The energy transition will be greatly accelerated under the guidance of the new energy security strategy and the requirements of the "Carbon Peak, Carbon Neutrality" goal. Energy enterprises are accelerating the establishment of a clean, low-carbon, safe and efficient modern energy system to support high-quality economic development.

Strategic Response

Under the guidance of the new vision, the Company implements a three-step overall scheme of "Clean Substitution, Strategic Succession and Green Transition" and has built five energy platforms of "Oil, Gas, Heat, Electricity and Hydrogen" to establish a "Low-Carbon Energy Ecosystem" where fossil fuels and clean energy are fully developed in an integrated manner, in order to achieve "near-zero" emissions around 2050, as well as contribute PetroChina's strength to achieve China's goal of carbon neutrality by 2060.

PetroChina green and low-carbon transition path

	Clean Energy Substitution 2021-2025	Strategic Succession 2026-2035	Green Transition 2036-2050
Aim	• By around 2025, the Company will endeavor to achieve carbon emissions peak.	• By 2035, endeavor to achieve supply of green and zero-carbon energy exceeding self-consumed fossil energy.	• By around 2050, the Company will achieve "near-zero" emissions.
Measure	• Intensify the development and utilization of new energy such as geothermal energy, solar energy, wind energy and hydrogen energy, to promote clean energy substitution for production and coordinated development of new energy, oil and gas industry chain. • Actively promote the integrated development of natural gas power generation and new energy power generation to provide society with clean energy products. • Actively deploy technical research and demonstration in the fields of resource substitution, such as hydrogen energy industry chain, gasification of medium-deep to deep underground coal, and in-situ conversion of low mature shale oil; strive to implement Carbon Capture, Utilization and Storage (CCUS) measures and actively explore the clean development and utilization of fossil fuels at lower cost.	• Promote coordinated development of new energy business, oil and gas business, and facilitate the formation of strategic succession pattern for oil and gas resources in new business sectors, such as clean power, hydrogen energy industry chain, clean transition and utilization of fossil fuels. • Promote the mass implementation of CCUS and carbon sequestration projects to continuously reduce carbon emissions.	• Continue to increase the scale of new energy development and utilization and strategic succession of oil and gas resources; improve the energy platforms for five major energy sources — oil, gas, heat, electricity and hydrogen.

TOPIC

DIGITALIZATION AND INTELLIGENTIZATION EMPOWERMENT FOR TRANSITIONAL DEVELOPMENT

Digital technology has given birth to new business forms and new models for enterprise development and has become a critical driving force for global economic development and a critical engine for high-quality economic development. The Company accelerates the digital transformation and vigorously promotes the development of digitalization, visualization, automation and intelligence. The extensive IT application in various business fields and the improved infrastructure and network security assurance capabilities have empowered the Company's transitional development.

Promote collaboration between business development and R&D innovation. We coordinate to optimize the oil and gas business chain and R&D innovation and upgrade the informatization from application integration to shared services. Through the overall arrangement of oil and gas production, with the goal of maximizing the overall profitability of the upstream as well as downstream business chain and shareholder value, we optimize resource allocation, processing, logistics and sales activities to achieve comprehensive perception of market dynamics, coordinate and optimize production operations, response rapidly to risk pre-warning, and provide accurate and efficient support for decision-making. In terms of collaborative research and development, the scientific research platform to integrate and share professional application is used to improve the efficiency of multi-disciplinary and cross-unit collaborative research and development, and the artificial intelligence digital tools is used to help new product research and development and improve the success rate of scientific research. A centralized and unified operation management and office management platform, as well as a centralized and unified production and operation management platform covering the upstream, middle and downstream of the oil and gas industry chain has been built and applied. The application of the platforms has improved management efficiency and promoted cross-professional and cross-departmental information sharing and business collaboration.

Facilitate industrial transformation and upgrading. We integrate the Internet, big data, artificial intelligence with the Company's business and focus on building smart oil and gas fields, smart refining and smart sales to facilitate industrial transformation and upgrading. In 2020, the Company published a new version of E&D Dream Cloud platform and the core data of the Company's upstream business could be fully shared.

Category	Aim	Application
Smart oil and gas field	• Based on perception, interconnection and data fusion, achieving a new oilfield business model of "Real-time Monitoring, Smart Diagnosis, Automatic Handling and Smart Optimization" in the production process.	• Xinjiang Oilfield builds an information system that covers businesses such as the Internet of Things for oil and gas production and collaborative research environment to provide production dynamics in real time, support oilfield production and operation activities, vigorously promote intelligent analysis applications and assist scientific decision-making.
Smart refining	• Improving the ability of perception, analysis and optimization, prediction and coordination ability of refineries to build a new smart refining model featuring efficient supply chain, lean operation, safe work control and interconnected operation and maintenance.	• Changqing Petrochemical establishes an information system covering the management, production execution and operation control levels, achieves operation automation, lean management and collaborative operation in the business areas of production, equipment, safety and environmental protection.
Smart sales	• With the help of digital technologies such as the Internet of Things, big data, and artificial intelligence, with the new retail concept, promoting the transformation and upgrading of refined oil retailing business, building a digital system of people, vehicles and life, and achieving the goal of "Smart Sales, Digital Operations and Integrated Management and Control".	• Shanghai Marketing explores the construction of digital ecosystem by facilitating its retailing with technologies such as big data and artificial intelligence.

RESPONSE TO CLIMATE CHANGE

At PetroChina, we support the global goal of limiting global warming to less than 2°C by the end of this century. To this end, we implement the "carbon peak, carbon neutrality" goal proposed by the Chinese government, and we strive to be the supplier of clean energy and the promoter of low-carbon transition of society, and share the practices of greenhouse gas control with industry peers and all sectors of society.

Management of Climate-related Risks

The Company's Board of Directors attaches great importance to the management of climate-change-related risks and opportunities and incorporates them into the Company's development plan. We pay close attention to existing and emerging carbon markets and have formulated relevant work plans for low-carbon development and green development as well as the climate-related plan. At the Company's management level, we continue to strengthen climate-related risk management, carbon emissions management and carbon risk management, improve carbon emission control system, develop low-carbon industries, improve clean energy supply, and actively participate in cooperation among global oil and gas industry in tackling climate change.

Corporate climate governance process

Organization	Duty
Board of Directors	• Formulating and reviewing the Company's green and low-carbon development strategy, major action plans, risk management policies, annual budgets, as well as supervising the Company's achievement of carbon emission reduction goals
Management	• Reviewing reports and recommendations submitted by functional management departments and submitting strategy, planning and management opinions and suggestions to the Board of Directors • Supervising and implementing the Company's green and low-carbon development strategy and action plans proposed by the Board of Directors
Strategic Planning and Low Carbon Management Department	• Organizing and carrying out strategic study on green and low-carbon development policies and strategies, analyzing climate risks and opportunities, as well as providing opinions and suggestions to the Company's management based on the Company's low-carbon management status • Implementing the Company's management goals and action plan related to low-carbon management

In 2020, the Company's Board of Directors and Management's governance actions on climate risk include:

- Conducted discussions and reports on climate and energy transition issues
- Incorporated green and low-carbon drive into the Company's strategy
- Started a research and formulation of green development action plan and green and low-carbon development industry plan
- Established a new energy and new material business development leading group to strengthen new energy development strategy and planning
- Formulated the Company's timetable for achieving carbon peak and "near-zero" emissions path
- Incorporated green and low-carbon development strategy into leadership training at all levels

Major climate-related risks identified by the Company and corresponding measures

Risks	Factors	Measures
Reputation	• A low-carbon image has become an important influential label for energy companies and the major focus of stakeholders. If the Company fails to meet its low-carbon development goals or fails to ideally meet such goals by the expected routes and measures, it may affect the Company's reputation and image adversely • Litigation related to climate may affect the Company's reputation and image	• Accelerating low-carbon transition of the Company • Improving level and transparency of ESG information disclosure • Extending external communication and participation
Market	• Public attention on climate change may facilitate market preference for low-carbon products and services, thereby affecting demand for fossil fuels, and resulting in an increase of the Company's capital expenditure and reduction of strategic growth opportunities • The rapid development of unconventional oil and gas resources, various alternative energy sources, new energy and new products may bring competitive pressure on the Company	• Continuing to pay attention to new development trends, comprehensively implementing clean production, reducing unit costs and improving efficiency • Vigorously developing clean energy and promoting high-quality and sustainable development of natural gas business • Considering climate-related factors in investment decisions and increasing investment in new energy and alternative energy
Technology	• Transition to low-carbon will increase the Company's cost of technological innovation, and the scale of new business model will affect the Company's development strategy	• Increasing investment in technological innovation and vigorously developing low-carbon and energy-saving technologies

Major climate-related risks identified by the Company and corresponding measures

Risks	Factors	Measures
Operation	• The carbon emissions policy may affect the Company's cost expenditure and profits	• Increasing geothermal heating and actively promoting clean substitution of oil and gas field production, accelerating the Company's transition to low-carbon development, strengthening management of carbon assets and actively participating in construction of carbon emission market
Policies and regulations	• The Company's compliance cost will increase due to follow the stricter environmental and safety regulations and higher standards for refined oil implemented by the Chinese government • Relevant international, domestic, and regional treaties and agreements restricting GHG emissions, as well as regulatory measures adopted or taken into consideration by some countries may bring high expenditures, increased operating costs and reduced profits	• Paying close attention to the changes in policies and regulations related to carbon trading
Physical	• Natural disasters such as typhoons (hurricanes), storm surges and floods caused by climate change may directly prejudice the Company's assets and business operation, and disruption to the supply chain will affect the Company indirectly. In particular, the damage of natural disasters to corporate assets in coastal areas and intensified water supply shortage in water-scarce areas	• Closely monitoring and regularly updating climate data, and timely issuing early warning • Strengthening HSE management

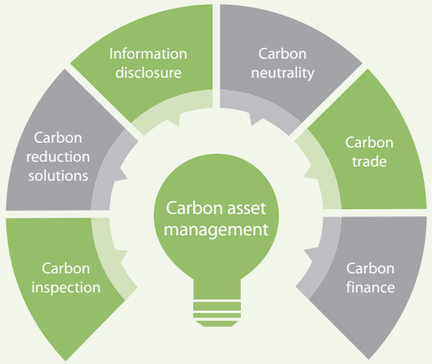
Curbing Carbon Emissions

PetroChina made continuous efforts on improving its management and control over carbon emission. In 2020, we strengthened carbon emission management, improved the carbon emission control system, and actively participated in global oil and gas industry cooperation on responses to climate change; issued the "Methane Emission Control Action Plan" to plan for methane emission targets.

Methane emission targets: strive to reduce methane emission intensity by around 50% by 2025 compared with 2019.

50%

Strive to reduce methane emission intensity by around 50% by 2025 compared with 2019



PetroChina's Carbon Asset Management System

The Company's low-carbon development plan

Supporting measures

1. Infuse low-carbon development into corporate strategy

- Based on the carrying capacity of resources and environment, rationally lay out industrial planning and project construction, improve policies for low-carbon development by fields and phases, introduce a carbon cost assessment mechanism, carry out carbon assessment of construction projects, and reduce projects and investment related to high-carbon emission businesses
- Conduct stress tests on related assets and strengthen management measures on the affected assets
- Improve the phasing-out standards, and introduce a gradual phasing-out mechanism for oilfields/blocks with high energy consumption and high water cut, and for refining and chemical facilities with high carbon emission per unit product and low market demand

2. Integrate low-carbon development into corporate management

- Improve green and low-carbon development systems and mechanisms, and conduct special supervision (especially on carbon emission intensity, implementation of tasks and measures, and progress of pilot/demonstration projects) to ensure the realization of targets and tasks
- Improve the measurement and inspection system for GHG emissions, carry out GHG emissions inspection, regularly prepare list of GHG emissions, and engage third parties in verification and evaluation thereof
- Establish a GHG control system, improve carbon emission quota control and carbon asset centralized management and control modes, plan and implement emission control projects and emission control measures to effectively reduce emission intensity, and ensure risks are under control.

3. Infuse low-carbon development into technological innovation

- Reinforce the synergy of enterprises, colleges and universities, research institutes and users to accelerate the translation and popularization of cutting-edge technology and research findings
- Build a low-carbon technology support platform and enhance the independent technological innovation capacity in terms of energy conservation, emission reduction and environmental protection
- Apply the green manufacturing technology to provide low-carbon products, and promote the lifecycle ecological environmental protection and resources/energy saving
- Communicate and cooperate with international organizations such as OGCI in respect of reducing methane emissions, promoting CCUS, improving energy efficiency, and reducing the carbon emissions intensity in the transportation sector

4. Integrate low-carbon development concept into social responsibility

- Promote the concept of low-carbon development, take measures for ecological civilization, support low-carbon activities, and commence the construction of low-carbon demonstration zones
- Establish a low-carbon development & climate investment fund, innovate business models and operating methods, and strengthen cooperation with social capital, local governments/enterprises and community, in order to build a low-carbon society
- Implement low-carbon demonstration projects in line with the Belt and Road Initiative, participate in South-South cooperation on climate change, and create the image of a responsible energy company

Strategic goals

2020 By 2020, CO_2 emission equivalent per unit of operating income decreased by 25% compared with 2015 ①

2030 By 2030, continue to increase the supply of natural gas and other clean energy, make sure that the proportion of the Company's domestic natural gas output in its overall domestic primary energy output, and that of new energy and renewable energy output in its domestic primary energy output will continue to grow

2050 By 2050, the proportion of the Company's domestic natural gas output in its overall domestic primary energy output, and that of new energy and renewable energy output in its domestic primary energy output will continue to grow

Progress in 2020

- In 2020, the Company's total GHG emissions decreased by 3.81% compared with 2019
- In 2020, the Company's natural gas production in China accounted for 47.2% of its total domestic output

Enhance carbon trading performance and carbon asset management

- In 2020, all subsidiaries under the Company on the list of the national carbon emissions trading market fulfilled their contracts

Strengthen management on carbon emissions

- Optimizing and adjusting industrial structure, eliminating backward production capacity, and implementing energy saving and emission reduction
- Optimizing and adjusting energy mix and, vigorously promoting the substitution of traditional energy use in oil and gas field production with clean energy such as geothermal energy, wind energy, and solar energy
- Strengthening GHG recycling (CO_2 utilization, methane recovery in oil and gas fields)
- Formulating carbon emission rules to regulate corporate carbon emissions
- Conducting GHG emission monitoring, reporting and verification (MRV)

Improve efficiency

- Promoting the construction of energy management and control

Promoting energy management and control in 38 oil and gas fields, refineries

More than 200 people participating in energy control standards training

Investing RMB 660 million to implement technical upgrading for both energy and water saving

Testing and accessing the energy efficiency of more than 12,297 (sets of) of energy-consumption equipment such as beam-pumping units, heating furnaces and pump units

Further increase scientific and technological support to lead low-carbon emission reduction efforts, achieve new results in CCUS key technology tests and reduce GHG emissions in the production processes.

- Focusing on strengthening the construction of basic conditions for low-carbon environmental protection technology and the construction of technological innovation talent team, and promoting the integration of production, learning, research, and application, as well as making important progress in the major technological projects, such as "Research and Application of Key Technologies for Low-Carbon and Clean Development"
- Making new progress in key technology research tests and application demonstrations of CO_2 capture, flooding and storage (CCUS) and supporting the construction and implementation of Jilin CCUS industrial tests, Changqing and Xinjiang demonstration projects
- Storing more than 1.9 million tons of carbon dioxide in the CO_2-flooding demonstration project in Jilin Oilfield

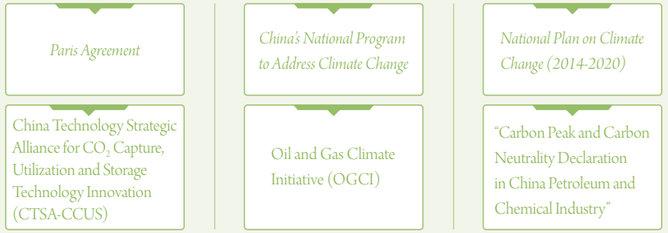
Actively participating in activities under OGCI framework

- Publishing OGCI "China CCUS Commercialization White Paper"
- Organizing 9 roundtable forums on transportation emission reduction
- Jointly publishing 2020 OGCI annual work report with member companies

- The total area of existing green space of 286.6 million square meters
- Planting a total of 2,811,000 trees in 2020
- Supporting local landscaping, with a green area of 727.23 hectares, planting 1,656,000 trees and building the first carbon-neutral forest —Ma'anshan Carbon-Neutral Forest in Daqing Oilfield

① The Company's CO_2 emission equivalent per unit of operating income decreased by 25.17% compared with 2015, with this goal achieved. In 2020, due to the price changes of oil price and pipeline business restructuring, the operating income of the Company has been adversely affected and there is no comparability in accordance with the caliber, the Company's total GHG emission of 2020 decreased by 3.81% compared with 2019.

Plans and initiatives for GHG emission reduction and control supported and participated in by PetroChina



Case Study PetroChina Actively Participates in OGCI Activities to Promote Carbon Emission Reduction in the Industry

As the sole member of OGCI in China, China National Petroleum Corporation (CNPC), PetroChina's parent company, is deeply involved in international cooperation to address climate change, and works with other OGCI members to achieve low-carbon transition in the oil and gas industry and conducts a research and formulates the "14th Five-Year Plan" CCUS business development plan. PetroChina takes an active part in CNPC's emission reduction cooperation under the OGCI framework.

Fulfill emission reduction commitments

The Chairman of the Company Dai Houliang issued the "OGCI-CEO Joint Open Letter", restating that under the challenge of COVID-19 and the impact of low oil prices, OGCI and its member companies will continue to fulfill their commitments and actively promote carbon emission reduction actions.

The Company together with OGCI member companies jointly issued a plan to reduce the average carbon intensity of the upstream field, promising that by 2025, the carbon emission intensity of member companies will be reduced from 23 kg CO_2 equivalent per barrel oil equivalent in 2017 to 20-21 kg CO_2 equivalent per barrel oil equivalent, reducing the average methane emission intensity to below 0.25%, with the aim of hitting 0.2%.

Publish "China CCUS Commercialization White Paper"

We conducted benchmarking studies on domestic and overseas CCUS commercialization policies and put forward a targeted China CCUS commercialization plan and held a seminar on "CCUS Commercialization White Paper: Oil and Gas Industry Goals and Actions".

Promote the Company's methane emission control and CCUS project

We issued the "Action Plan for Methane Emission Control", and deployed and implemented the "Seven Major Projects" to promote the Company's methane emission control to a world-class level. We completed the research on the CCUS Industrial hub in Junggar Basin. The design of the first phase of the CCUS with the capacity of 1 million tons/year has passed expert verification and the second phase will have a capacity of 3 million tons/year, with a potential of 10 million tons/year, which has been affirmed by the Ministry of Ecology and Environment and Energy Administration.

Commit to sustainable transportation

As one of the leading companies of the OGCI transportation working group, we worked with the member companies to select prior low-carbon fuel routes, invite global oil, hydrogen and road transportation industry organizations, convene roundtable forums on emissions reduction in transportation and undertake the online "Sustainable Transportation Development Opportunity Forum".

Industry exchange

The Company's domestic and overseas counterparts and professional organizations conduct in-depth exchanges on low-carbon transition and carbon emission reduction. We organized 9 roundtable forums on emissions reduction in transportation. We jointly published the 2020 OGCI annual report.

Case Study Building PetroChina's first carbon-neutral forest

In November 2020, PetroChina built the first carbon-neutral forest in Ma'anshan, Daqing.

What is "Carbon Neutrality"?

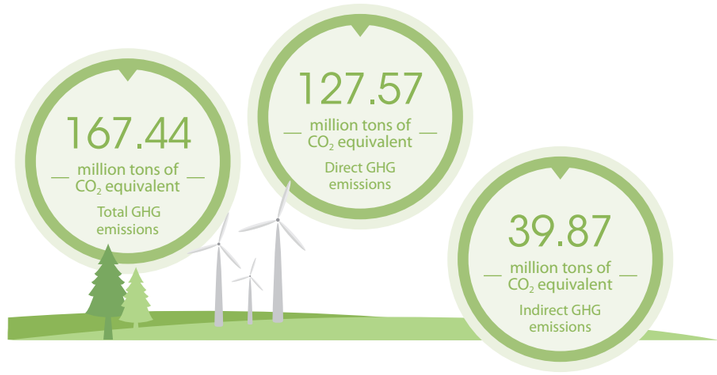
Carbon neutrality means having net-zero carbon dioxide emissions. To achieve this, the companies, groups or individuals shall measure the total amount of GHG emissions produced directly or indirectly by themselves within a certain period of time. And the carbon emissions shall be offset by afforestation, energy saving and emission reduction activities.

To achieve carbon neutrality, there are generally two methods: first, removing greenhouse gases through special methods, such as carbon compensation; second, reducing carbon emissions. Carbon-neutral forests are ecological compensation method that neutralizes carbon emissions through afforestation.

PetroChina's carbon-neutral forest

We carefully selected deciduous broad-leaved trees and evergreen coniferous trees with strong adaptability, good landscape effects and large carbon sink functions, and mixed planting with the principle of biodiversity. The planted tree species not only have strong carbon sequestration ability and ornamental properties, but also have high economic value.

510
Total area of tree plantations

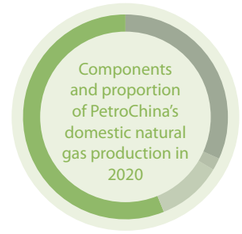


DEVELOPING CLEAN ENERGY

We focus on the sustainable supply of clean energy in the future, vigorously develop natural gas, increase business layout of new energy and new materials to meet the needs of the society for clean and high-quality energy and products.

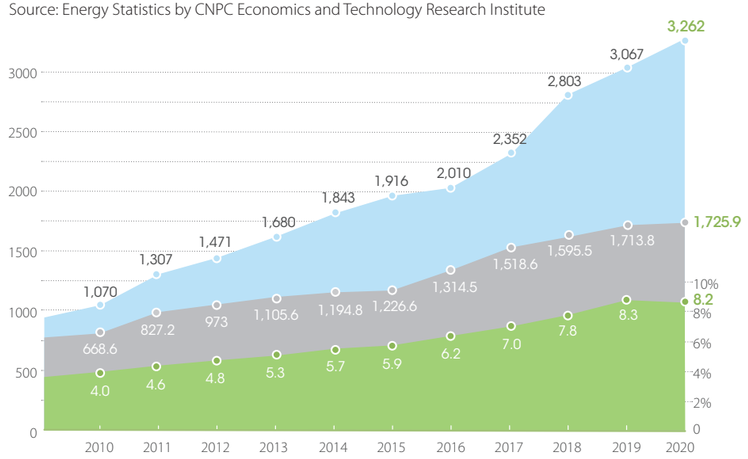
Natural Gas

The natural gas is the Company's strategic, growing and value-added business, which serves also as a bridge for the transition from fossil fuels to clean energy and the vigorous development and utilization of natural gas is a basic project that runs through the process of green and low-carbon transition and development. The Company promotes the development of conventional gas and unconventional gases such as tight gas, shale gas and coal-bed methane. In addition, the Company imports natural gas through multiple channels in order to form a diverse energy supply system.



Green Power and Improving Energy Mix

Source: Energy Statistics by CNPC Economics and Technology Research Institute



Natural gas consumption in China (100 million cubic meters)①

PetroChina's domestic natural gas sales volume (100 million cubic meters)

Proportion of natural gas in China's primary energy consumption mix (%)②

Note: ①② The data of 2020 are primarily estimated.

In 2020, the Company produced 119.52 billion cubic meters of natural gas, including domestic production of 113.09 billion cubic meters, up 9.9% year-on-year. We increased imports of pipeline gas and LNG, and sold 172.59 bcm of natural gas domestically, which contributed to the optimization of China's energy mix and the construction of a beautiful China.

PetroChina's share in domestic natural gas output

Proportion of natural gas in PetroChina's total domestic output

Unconventional Natural Gas

Shale gas

- PetroChina's annual output of shale gas in southern Sichuan reached 11.6 billion cubic meters and its daily output has increased by 10 million cubic meters for three consecutive years

Coalbed methane

- Two major coalbed methane industrial bases in Qinnan and Eastern Hubei, with a production capacity of 2.27 billion cubic meters per year
- Coalbed methane produced amounted to 2.18 billion cubic meters in 2020

Natural gas utilization and alternative fuels

We promote the comprehensive utilization of natural gas in city gas, industrial fuels, natural gas power generation, chemical feedstock and vehicle fuels. To meet the demands of the "coal-to-gas" users and maintain stable supply of resources, the Company strengthened demand-side management to make sure users in seven provinces and municipalities in northern China could enjoy sufficient gas supplies for heating in the winter months.

Case Study "Warm Winter" Coal-To-Gas Project

China's "coal-to-gas" project has gradually expanded from Beijing-Tianjin-Hebei and its surrounding areas to Fenwei Plain, covering 39 cities in two regions. It is a key "battle" to win the Battle for Blue Skies. As the main force of the "coal to gas" project, PetroChina has joined hands with local governments and industry companies to fully meet the demand for clean heating of northern people.

In 2020, the Company has installed gas-use facilities for 420,000 households in Shijiazhuang, Xiong'an New District, Shandong and other places, benefiting nearly 2 million people. In winter, "coal to gas" users' gas supply reaches 400 million cubic meters, which are able to replace 600,000 tons of coal. While alleviating the pollution caused by scattered coal burning in winter, it also guarantees the people have a warm winter.

New Energy and Alternative Energy

We take the development of new energy and alternative energy as new driver for the development of green and low-carbon transition. In 2020, we set up a new energy and new material business development leading group, strengthened new energy development strategies and plans and continued to expand new energy businesses such as geothermal energy, solar energy, bio-fuels, and charging (battery exchange) stations, especially in the field of hydrogen energy with great progress.

PetroChina's hydrogen station in palce to refuel for Beijing 2022 Winter Olympic Games

- Established Shanghai Zhongyou Shenneng Hydrogen Energy Technology Limited to build a new cooperation platform focusing on hydrogen energy and prepared for the construction of the first oil-hydrogen station in Shanghai Lingang New Area
- Signed 70Mpa hydrogen refueling station project cooperation agreement to promote the construction of demonstration hydrogen refueling stations
- Supported the hydrogen energy supply for Beijing and the Winter Olympics, by arranging and constructing hydrogen refueling stations at the Capital Airport, along the Beijing-Zhangjiakou Expressway and parking spots for the 2022 Winter Olympics hydrogen fuel vehicles, laying out a number of high-speed hydrogen corridors, actively building an proprietary core technology system and standard system for the hydrogen energy industry chain and key materials
- The preliminary evaluation work of the renewable energy to hydrogen demonstration project is in progress, and the renewable energy to hydrogen demonstration project is planned to be completed by the end of the "14th Five-Year Plan"

New energy and alternative energy research directions promoted by PetroChina

New energy development directions		Progress in 2020
Geothermal	• Accelerate fine evaluation of geothermal resources, accelerate formation renovation technology of increasing economical and applicable thermal reservoir, explore medium and high temperature geothermal power generation technology and dry hot rock exploration, development and utilization	• Promote geothermal heating and substitution of energy for production around oil fields in North China, Liaohe, Jidong, Dagang and other areas and add 1.846 million square meters of geothermal heating area. Geothermal utilization replaces 222,000 tons of standard coal • Establish sandstone and carbonate geothermal storage recoverable coefficient indexes, construct geothermal economic evaluation and program optimization software system, and optimize the formation of deep well heat exchange, recharge technology and high-efficiency heat pump technology series
Solar energy	• Use oilfield resources and social forces to build photovoltaic power generation to replace traditional energy for production	• The installed photovoltaic capacity was 31.5MW and the photovoltaic power generation amounted to 30 million kWh in 2020
Hydrogen energy	• Focus on the development of such technologies as renewable energy to hydrogen production, low-cost hydrogen production, hydrogen liquefaction, and storage and transportation	• Complete the development of process package for dual refueling/hydrogenation station construction and make new progress in the research on hydrogen refueling station design and construction and safety operation technology. • Commenced the construction of 2 demonstration hydrogenation stations

30
million kWh
the photovoltaic power generation in 2020

Green Products

We optimize the energy consumption structure by upgrading energy products. The Company's refineries fully supply National VI standard gasoline and diesel to meet the market demand for high-quality oil. The manufacturing level of downstream green chemical products and the level of green management throughout the life cycle continue to improve, effectively supporting the country in achieving its air pollutant emission reduction targets.

ECOLOGICAL PROTECTION

PetroChina actively responds to global initiatives and international conventions including the UN's *2030 Agenda for Sustainable Development* and the *Convention on Biological Diversity*, and relevant requirements put forward by the Chinese government for environmental protection. We strictly observe applicable international and Chinese laws and regulations, and learn from advanced practices of the industry. We have implemented the full lifecycle management and control of production operations and strictly manage and control the discharge of waste and pollutants in the course of production. We have amended and improved *Regulations on Environmental Protection Management*, upgraded the action plan related to green development, supported implementation of the *Plan for the Upgrading of Pollution Control*, *Ecological Protection Program* and low-carbon development plan. The Company makes great efforts to build a green development system that covers all aspects of the industry chain and explores and practices the development mode of green production with low energy consumption and low emissions in order to achieve harmonious coexistence with the environment.

Continuous Improvement of HSE Management

The Company attaches great importance to health, safety and environment (HSE), and gives top priority to HSE work in our business development at all times. We adhere to the green development concept of "integration and coordination between development activities and environmental protection, with environmental protection first". We follow a uniform HSE management system certified by ISO 14001 in our operations worldwide, and have formed a globally integrated HSE working platform and risk control platform. We continuously strengthen supervision and safety training, in order to enhance our HSE management performance.

We have established an environmental protection incentive mechanism to commend the units and individuals for their outstanding achievements, and to protect and reward individuals who report environmental violations. The environmental protection performance as a KPI index is included in the performance appraisal of senior management of the Company and senior managers of regional companies, and the accountability system for environmental protection performance and the lifelong accountability system for ecological damage have been put in place. In 2020, we focused on improving environmental risk prevention and control capabilities, further improved the environmental protection management system of "one-post, two-responsibilities", and solidly promoted pollution treatment and environmental protection, and our safety and environmental protection is in steady progress.

Completed "Plan for Upgrading Pollution Control" in 2020

- Implemented "2020 Pollution Control Project List"
- Issued the Company's "Work Plan for Strengthening Ecological Environmental Protection of the Yellow River Basin"
- Completed anti-seepage upgrading at over 20,000 gas stations
- Reached missions and goals of blue sky, clear water and pure land

In 2020, neither the Company nor any of our subsidiaries were on the list of heavily polluting enterprises released by the Ministry of Ecology and Environment.

Improving environmental risk management mechanism

We continuously improved the "three-level" environmental risk prevention and control system, conducted environmental risks identification and assessment, identified "six major environmental risk factors", and made inspections and handling of ecological and environmental hazards. We established the environmental risk management mechanism featuring "layered management and graded prevention and control", and organized emergency drills and emergency monitoring drills on a regular basis, in order to improve the Company's capabilities in environmental risk prevention and control.

Annual progress of the environmental risk management mechanism in 2020

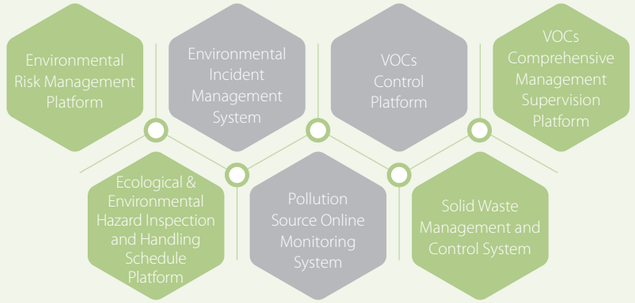
Established regular investigation and management mechanism for hidden hazards of the ecological environment

- Issued the "Notice on Carrying Out the Investigation and Treatment for Hidden Hazards of Ecological Environment in 2020"
- Formulated the "Implementation Regulations for the Investigation for Hidden Hazards of Ecological Environment (Trial)"
- Regional companies comprehensively carried out the investigation and management for hidden hazards of ecological environment

Strengthened accountability for accidents

- Revised the "PetroChina Environmental Incident Management Measures"
- Strengthened the management and control of environmental emergencies and environmental violations, implementing escalation investigation and escalation handling of environmental incidents

PetroChina Intelligent Environmental Management System



Case Study Pollution source online monitoring system

The Company continues to increase the online monitoring and control of the pollution sources of waste water and waste gas. PetroChina's pollution source online monitoring system has advanced technical features such as flexibility, efficiency, intuitiveness and intelligence. The system uses advanced information technology methods and automatically identifies and judges missing and abnormal data to serve the intelligent prediction of pollutant emissions.

By the end of 2020, PetroChina has monitored 680 pollution sources online, all key pollution sources in the list of national key pollutant discharge units and all elevated sources in Beijing-Tianjin-Hebei and surrounding areas are under control. The automatic monitoring of pollution sources covers all major production facilities and pollution sources of PetroChina.

Water Management

The Company strictly complies with applicable laws and regulations on the protection of water and water pollution prevention and control, such as the *Environmental Protection Law of the People's Republic of China*, the *Water Law of the People's Republic of China*, and the *Law of the People's Republic of China on the Prevention and Control of Water Pollution*.

Improve the efficiency of water utilization. Implement the "National Water Conservation Action Plan." Through measures including strengthening water conservation management and water-saving technological transformation, we strive to reduce fresh water consumption and realize sustainable water utilization. Dushanzi Petrochemical Branch was awarded the title of *Water Efficiency Leader in the Ethylene Industry of Key Water-using Enterprises in 2020* by the Ministry of Industry and Information Technology and other four ministries.

Strengthen water pollutant management. The Company takes necessary preventive and control measures, effectively controls the risk of water pollution, and strives to prevent the oil leakage. At oil/gas fields, effluent such as heavy oil wastewater, oil production wastewater and fracturing backflow fluid is comprehensively recycled. At refineries, wastewater from key pollution sources is specifically treated and the wastewater treatment plant is upgraded to ensure various wastewater is disposed thoroughly. We enhance treatment of pollutants such as nitrogen, phosphorus and petroleum, in addition to conventional water pollutants.

In 2020, the Company completes the anti-seepage upgrading of over 20,000 gas stations.

3.01%

Our annual fresh water consumption was 769.95 million cubic meters, representing a decline of 3.01%

9.44 million cubic meters

Water saved

0.515 cubic meters

Fresh water consumption in processing one ton of crude oil

In 2020, we

1,190 hectares	8,220 hectares	471 hectares
Land saved	Land reclaimed	Land receded

100%
Utilization and harmless treatment rate for drilling waste resource

Land Resources Management and Protection

The Company attaches great importance to the protection of land resources and has developed the *Measures for Land Management*, in order to achieve the sustainable use of land resources.

Improve land utilization efficiency. We improve the land utilization efficiency through innovations in land-saving technology and the management model. Specifically, we make careful and intensive use of land during production, strictly control land use growth, and optimize use of land in various ways such as active reclamation and carry out environmental treatment and recovery in mining areas.

Waste Disposal and Ecological Restoration

The Company attaches great importance to the supervision of hazardous waste and realizes the management of the entire production process in important areas of ecological and environmental risks. The Company establishes a unified management and control platform for the entire process of hazardous waste, realizing a three-level management and control mechanism for hazardous waste. The Company adopts whole-process management and control of collection, storage, transportation, utilization and disposal of solid wastes such as oily sludge, drilling waste and used catalyst.

Case Study The Company's solid waste management and control system goes online

The Company develops a solid waste management and control system. In accordance with the basic principles of "generating unit reporting, enterprise review, and headquarters supervision", we have achieved online monitoring, classified management and statistics of the whole process of general industrial solid waste and hazardous waste by decomposing and implementing the responsibility for the entire process of hazardous waste compliance management and control to every relevant grass-roots unit, every aspect, every point and to every responsible person.

Case Study The Company achieves source control of solid waste from oil and gas production

The Company's research and development of oil and gas drilling solid waste pollution prevention and control and resource utilization technology has achieved "near zero" discharges of oil and gas production solid waste and has been applied in 18 domestic and overseas oil and gas fields. This technology has changed the traditional solid waste treatment method, achieving:

- The transformation of drilling fluid to environmentally friendly
- The treatment method of waste drilling fluid is transformed from mud pit settlement treatment to non-landing reuse treatment
- The drilling waste is transformed from on-site solidified landfill treatment to recycled and resource-based products

In 2020, the Company continues to strengthen the environmental supervision of fixed pollution sources of the refining and chemical businesses and achieves full coverage of pollution discharge permit management of the refineries.

PetroChina contributed to the Battle for Clean Land and was affirmed by the Ministry of Ecology and Environment

As a test unit of national enterprise land survey, PetroChina actively cooperates with the requirements of the Ministry of Ecology and Environment to form the "China Petroleum Soil and Groundwater Environmental Investigation Work Plan" and invites national-level experts to regularly conduct special training for corporate personnel to ensure that the participants master the management and technical requirements in a timely manner. At the end of 2020, PetroChina has completed all investigations and national spot checks with a 100% passing rate. In February 2021, the Department of Soil Ecology and Environment of the Ministry of Ecology and Environment praised PetroChina for its outstanding performance in the investigation of the soil pollution status of land of enterprises in key industries across the country.

Air Pollutant Management

The Company strictly abides by the *Law of the People's Republic of China on the Prevention* and other laws and regulations and continuously strengthens the treatment of conventional and special air pollutants. In 2020, the Company carried out ultra-low-emission retrofitting of coal-fired boilers in accordance with national and local requirements, implemented low-nitrogen transformation of oil and gas boilers, and implemented denitration transformation of catalytic cracking units; ensured the stable operation of waste gas treatment facilities for oil and gas recovery in gas stations, power plant coal-fired boilers, refining and chemical catalytic cracking, reforming and other devices.

Biodiversity Conservation

The Company is committed to reducing the potential impact on the environment and biodiversity during production and operation. We insist on source management and control and implement environmental management in the full life cycle throughout the industry chain. During the design and planning stage, the facilities and access routes should bypass the natural, sensitive and important habitats of the organisms; during the whole life cycle of the mining facilities, measures should be taken to limit the interference and minimize the impact on biodiversity to the extent possible; during the operation period and after the closure, measures should be taken to gradually restore the affected areas to restore or recover the ecosystem; for the unavoidable long-term impact, compensation should be carried out towards biodiversity outside the area.

We published the *Environment Protection Program*, launched green fields building activity, and exited from environmentally sensitive areas in an orderly manner, endeavored to reduce the occupation of arable land and actively promote the conservation of soil and water and restoring the vegetation, working hard to restore the ecology of our operation areas. In 2020, the Company discharged 281 oil, gas and water wells in environmentally sensitive areas.

The Company further strengthened VOCs emission management and control and promoted VOCs management and control and benchmarking actions of refineries in 2020. The refined oil sales companies carried out the "unloading oil at night, refueling off-peak" sales activity in key areas in summer, which was highly recognized by the local ecological and environmental authorities.

COD emissions were reduced by 3.7%

ammonia nitrogen emissions were reduced by 4.5%

sulfur dioxide emissions were reduced by 5.7%

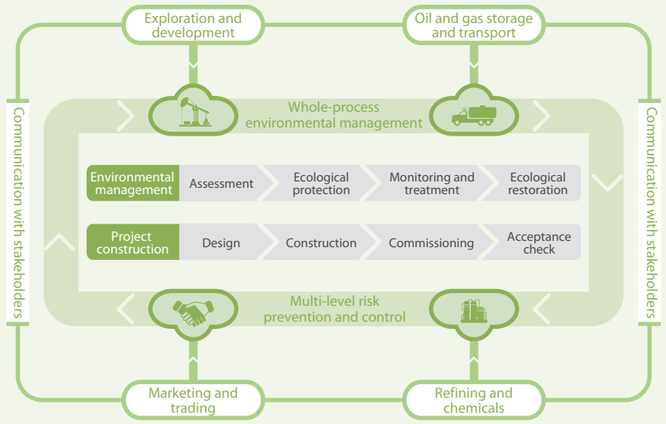
nitrogen oxide emissions were reduced by 12.8%

year-on-year, respectively

47

As of the end of 2020, The Company's 47 oil and gas production units have been included in the 2020 National Green Fields List

Whole process eco-environmental management throughout the industrial chain



60

In 2020, the companies involved implement 60 pollution control upgrade projects

Case Study Protecting the ecological environment of the Yellow River Basin

The Yellow River Basin is an important energy production base and development area of the Company. The Company attaches great importance to the ecological and environmental protection of the Yellow River Basin, establishes a special leading group, implements the "Work Plan for Strengthening Ecological Environmental Protection of the Yellow River Basin", continuously strengthens corporate environmental governance, and builds a long-term prevention and control mechanism. The Company's ecological environment protection level and risk prevention and control capabilities in the Yellow River Basin have been continuously improved.

In order to improve ecological environment protection and high-quality development of the Yellow River Basin, the Company:

- Deploys eight tasks of ecological protection, clean production, wastewater, waste gas, solid waste, soil and groundwater pollution prevention, environmental risk prevention and control, and environmental supervision
- Oil and gas field companies comprehensively promote cleaning operations and continue to use oil sludge resources
- Refineries continue to improve the level of refined environmental protection management and "three level prevention and control" system of water pollution
- Sales companies completed the anti-seepage upgrading of underground oil storage tanks at gas stations

Case Study Create green fields and build ecological demonstration oil fields

Changqing Oilfield is China's largest oil and gas field. In the process of increasing production to 60 million tons, we continue to focus on the creation of green fields, strengthen the prevention and control of oil and gas field pollution and take actual actions to implement ecological protection and high-quality development in the Yellow River Basin.

Environmental protection

Nearly 1,000 oil, gas and water wells and dozens of stations have been discharged from environmentally sensitive areas and ecological restoration has been carried out in time for the discharged wells and stations	20 ecological environment protection zones and more than 800,000 mu of carbon sink forest were built in Longdong oil area	3 million square meters of green plants are added every year in the oil and gas development area, with a green coverage rate of 95%

Green production

5 natural gas purification plants with exhaust gas treatment devices, reducing SO_2 emissions by thousands tons per year	142 site heating furnaces changed from coal (oil) to gas	From 2018 to 2020, removed 3,968 coal-fired heating furnaces at the wellhead	Full implementation of "non-landing" drilling waste and cumulative disposal of about 7.2 million tons of mud (cuttings)

EMPLOYEE DEVELOPMENT AND INTERESTS

Employees are our most valuable assets. The all-round development of employees is one of our primary targets. We protect employees' rights and interests, care for their physical and mental health, and provide a platform for their career development. We continue to promote localization of employees and have been strengthening security at our overseas operations. We endeavor to create an inclusive, equal, mutually trusting and cooperative working environment, and to ensure value is aligned to benefit both employees and the Company.

EMPLOYEE RIGHTS AND INTERESTS

We remain committed to a people-first philosophy in treating our employees with respect and equality while protecting their legal rights. We endeavor to resolve the most practical issues that our employees are concerned about and ensure that all employees share the fruits of our development on an equal basis.

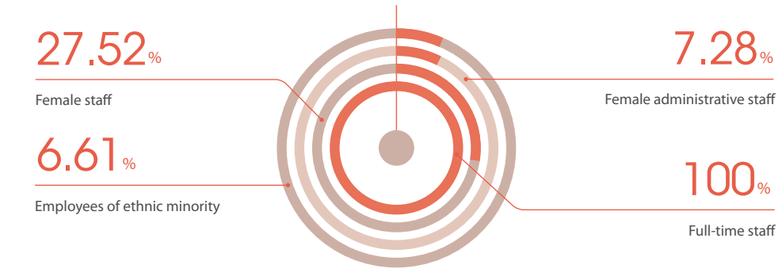
In 2020, no labor-related offence of material implication to our business was committed in the Company.

Fair Treatment of Employees by Law

We conscientiously abide by international conventions approved by the Chinese government, including the *International Covenant on Economic, Social and Cultural Rights* and the *Elimination of Discrimination in Respect of Employment and Occupation*, along with domestic laws including the *Labor Law of the People's Republic of China and the Labor Contract Law of the People's Republic of China*, and relevant laws, rules and regulations of the host countries. We have formulated the *Measures for the Management of Employment Contracts* and the *Measures for the Management of Overseas Employment* and established a complete employment management and policy system to regulate employment practices according to the law. The system incorporates employment contract management, remuneration insurance and benefits, leave, performance appraisal and vocational training. We strictly comply with the applicable laws and regulations on the dismissal and working hours of employees, and, in line with specific circumstances of the Company, have formulated management regulations and detailed implementing rules that are applicable to all enterprises, employees and business courses of the Company. Through self-inspection of our employment practices in compliance with the law, we regulate the recruitment and promotion of employees and the termination of employee contracts, and provide effective protection of the legal rights of employees. We provide equal opportunities and fair treatment to all employees regardless of their nationality, ethnicity, race, gender, religion and culture. We strictly comply with the State's *Provisions on Prohibiting Usinig of Child Labor* and the similar legal requirements of countries and regions where we operate our overseas businesses and prohibit the employment of child labor and reject all forms of forced or compulsory labor. We emphasize the employment of local residents, women, ethnic minorities and college students in order to increase job opportunities for local communities. We strictly implement regulations on female employees' confinement and lactation to protect their rights and interests. We continue to open recruitment to the public, without restrictions on applicants' ethnicity, gender or religion.

100%

In 2020, 100% of employees who took maternity/paternity leave returned to work and kept their posts.



Remuneration and Benefits

The Company has further improved its performance appraisal and remuneration system, implemented a differentiated management and control system which classifies total payrolls by grade and category based on different enterprise functions, positioning and business characteristics, and improved a marketized payroll decision and normal increase system that basically suits the labor market and is linked with the performance and labor productivity of the Company. The Company has formulated and circulated special incentive and restrictive measures for improving quality and profitability, optimized the special work reward policy to improve the differentiated remuneration distribution mechanism. The Company has also made major efforts to promote the implementation of the dividend incentive policy of technical enterprises and facilitated the involvement of multiple elements in distribution in an orderly way, through giving further priority in remuneration distribution to those work units which have contributed more profits and have a high input-output efficiency, employees at front-line and key posts, and urgently-needed talents of high level, high technology and high technique, so that each employee can realize his/her full potential. In addition, we have paid all social insurance premiums for employees on time and in full in accordance with the *Social Insurance Law of the People's Republic of China*, improved corporate annuity and supplementary medical care and insurance, and improved production and living conditions for front-line workers, so as to ensure employees' interests.

In 2020, we

- Formulated and circulated special incentive and restrictive measures for improving quality and profitability, and optimized the special work reward policy
- Entered into annual performance contracts for 2020 with the President's team and regional company leaders, realizing full coverage of business leaders in performance appraisal
- According to the graded authorization management mode, guided and facilitated the performance appraisal of administrative staff members at the headquarters and affiliated enterprises of the Company and the relevant business, operational and managerial employees at the middle level or below, professional technicians and operating skilled employees

Democratic Participation

We give full respect to employee's democratic rights and lawful interests. We attach great importance to employees' role in democratic management, democratic participation and democratic oversight. Apart from establishing and improving trade unions, we have put in place a democratic style of management and a transparent system to deal with matters at its plants, through its Employees' Congress system, to ensure employees are well-informed and have the means to participate in and supervise corporate management. We have further standardized the content, procedures and model of our open system for matters at our plants by clarifying duties and authorities, the organizational system, and working processes for the Employees' Congress.

The Company has established multiple channels to communicate with employees and has continued to implement democratic procedures. We communicate across different levels of the Company and conduct multi-level communication through meetings with staff representatives and online discussions, to encourage employees to participate in the management of production and operations.

HEALTH AND SAFETY

Our health and safety management covers all staff, including staff in the entities in our supply chain. We give top priority to employee health and safety by emphasizing occupational health management and protection at field operations, continuously improving working conditions, abiding by the statutory working hours and holidays required by the places of business and taking employees' mental health as a priority.

Occupational Health

We abide by the *Prevention and Control of Occupational Diseases Act of the People's Republic of China* in our occupational health management, focusing on the prevention and control of occupational hazards as well as the implementation of related measures, such as poison prevention, dust removal and noise reduction.

Key Actions for Occupational Health in 2020

Popularizing the knowledge of occupational health	• Organized the event of 2020 Publicity Week of *the Law on Prevention and Control of Occupational Diseases*
Pilot assessment of health risks	• Conducted health risk assessment of the employees at key posts of Tarim Oilfield Branch and Lanzhou Petrochemical Branch, and made active health interventions for employees with such chronic diseases as hypertension
General survey of occupational health	• Obtained basic occupational health information such as harmful elements through self-check by business units, supervision by professional firms and verification by the head office so as to lay a foundation for scientific decision-making and sound occupational health work
Response to *Healthy China 2030*	• Published the Company's *Implementation Scheme for the Outline of Healthy China 2030*
Overseas epidemic prevention and control efforts	• Established a joint prevention and control mechanism of four levels (the head office, professional companies, foreign-related enterprises and overseas projects) and strengthened the overall planning and coordination among various regions to realize full coverage of epidemic prevention and control efforts • Set up seven regional technical support teams to provide epidemic prevention and control guidance for overseas projects by region and country and make scientific judgment of epidemic developments, and organized six video seminars at the head office level to discuss epidemic prevention and control work in international business • Established an epidemic prevention and control system for international business and promoted specifically-targeted epidemic prevention and control measures • Conducted 5,333 on-line tour inspections of overseas epidemic prevention and control work and provided 52,490 training seminars • Sent five medical teams to Iraq, Kazakhstan, Uzbekistan, Chad and Niger, improving local epidemic prevention and control capabilities significantly
Health management of overseas employees	• Updated and published the *Administrative Provisions on the Health Examinations and Assessment of Employees Going Abroad*, realizing full coverage of employees going abroad with regard to health examinations and assessment. 17,400 employees have received such health examinations and assessment and 648 employees have improved their health condition significantly through this effort

99.33%
Detection rate of workplaces occupational hazards

99.25%
The occupational health examination rate for employees facing occupational hazards

100%
The establishment rate of employee occupational health monitoring archives

4
Four urgent transnational medical evacuations were carried out overseas, through which four patients with serious diseases were saved successfully

Mental Health

We pay close attention to our employees' mental health. We take measures to improve the employee vacation system and regularly organize employee health examinations, set up a hotline and a website for psychological counseling, and carried out various forms of training on mental health knowledge, in order to encourage employees to adopt a positive and healthy attitude. We provided training sessions on mental health management, continued to implement the Employee Assistance Program (EAP), and dispatched psychologists to advise on mental health and safeguard such employees against mental health issues. The Company's overseas mental health team provided psychological assessment services to approximately 3,000 employees throughout the year, and "one-on-one" online psychological consultation to more than 400 overseas employees in key overseas regions and projects during the outbreak of COVID-19.

Overseas EAP

- The psychological counselling hotline provided 2,017 hours of service in 2020
- Provided 31 online mental health seminars for 7,251 employees and their families overseas
- Upgraded the employee wellness platform, updated more than 100 articles on mental health, and updated 10 psychology video courses. The average monthly clicks on the platform exceeded 13,000

Case Study Establishing a comprehensive mental health protection mechanism for overseas employees

In the face of the outbreak of COVID-19, the Company provided employees with physical health diagnosis and other measures, established a comprehensive physical and mental health protection mechanism for overseas employees and protected the physical and mental health of overseas employees by means of strengthening the evaluation of the need for materials by overseas projects, building a remote medical support platform, organizing remote epidemic prevention and mental health consultation lectures and establishing contacts between overseas medical teams and domestic professional health institutions.

Safety and Security

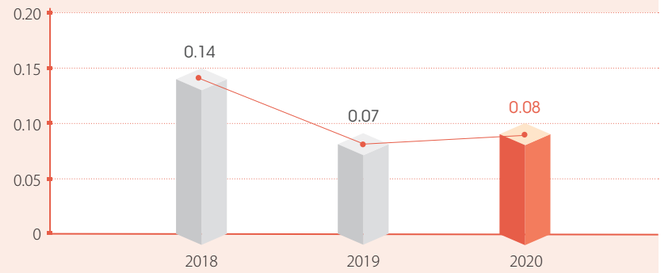
PetroChina views production safety as a core value and implements this concept in all segments and all production and operation processes. We actively promote the building of a longstanding work safety system to raise the overall safety management level. In 2020, we took steps to improve our supervision to better implement safety accountability, and by doing so, we consolidated basic work at the grassroots level, and kept up a stable and controllable situation in terms of operational safety.

6,806
Loss of working days due to work-related injury

2
Fatalities

0.0495 accidents/100 million working hours

Production Related Fatal Accident Rate (FAR) (person/100 million working hours)

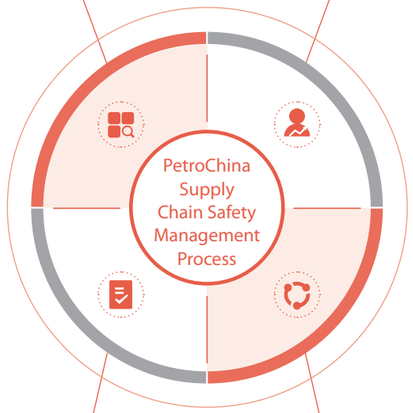


Strict screening process

- Implement safety qualification screening system for contractors and suppliers
- Establish safety performance records
- Regularly publish the list of qualified contractors, and remove unqualified contractors from it

Capacity building

- Promote the holding of certificates by contractors' management personnel
- Provide training on system development, HSE system audits, safety management and emergency response



Evaluation and assessment

- Establish safety performance evaluation system
- Carry out safety capability assessment, daily safety performance evaluation, and comprehensive safety performance assessment
- Strictly hold accountable those who violate national workplace safety laws, regulations and contracts
- Contractors failing to pass the safety performance assessment or with major accidents will no longer be engaged

Process control

- Strictly implement the safety supervision responsibility of contractors, based on the principle that those undertaking, supervising and implementing the project are held responsible
- Conduct targeted inspection of contractors' safety management

The safety of our employees has always been an overriding priority in our overseas operations. We established an overseas security prevention and control management system to ensure safety, promoted the operation of security management systems, strengthened comprehensive control of security risks, continuously enhanced emergency response capabilities, and eliminated security-related fatal incidents in overseas projects.

Key Actions for Overseas Security in 2020

Continue to promote the establishment of security management system	• Carried out five dimensional performance appraisal for 26 enterprises
Strengthen security risk assessment	• Improved country-specific risk assessment indicators and adjusted the security risk levels of 13 countries (regions) including Niger • Completed security risk assessment reports for key countries including Kazakhstan and Iraq • Organized a video seminar on response to kidnapping risk and situation analysis in security hotspot areas under the normalization of COVID-19 prevention and control • Issued 11 safety alerts • Reviewed and approved security plans for new projects in the countries (regions) with high and above risks, and completed the review and approval for 289 security plans
Enhance overseas emergency management	• Updated and released the Company's *Special Emergency Plan for Foreign-related Security Emergencies* and *Special Emergency Plan for Foreign-related Public Health Emergencies* • Revised three special emergency plans for security of affiliated companies • Publicized the Company's latest emergency plan • Carried out training and drilling for security emergency plan • Reviewed the filing of emergency plans and security plans for overseas projects
Training on counter-terrorism for overseas employees	• Organized 130 overseas counter-terrorism and security training sessions, covering 9,841 person-times; rates of overseas employees' counter-terrorism safety training: 89.24% of management positions; 97.38% of operation positions (affected by COVID-19, the shift of employees to overseas projects was severely blocked, resulting in training rates being lower than previous years)

9,841 person-times

130 overseas anti-terrorism and security training sessions were provided, registering 9,841 person-times. In order to adapt to the sudden outbreak of COVID-19, we innovated the training mode, shifting from on-site training to on-line training.

EMPLOYEE DEVELOPMENT

We addressed our employees' need for career development at different stages, paying close attention to their career planning. We made continuous innovation in the environment, system and mechanism for talent cultivation, attached great importance to the construction of resource system for talent cultivation and provided a big platform for employees to develop their personal potential.

Employee Training

By applying the management mechanism of "two-tier planning; three-tier training", we effectively guaranteed the coverage and effectiveness of employee training, vigorously promoted the mode of "internet + training" to tap the potential of human resource value, and continued to innovate training methods, carried out diversified and differentiated vocational training for employees in order to achieve positive interaction between employee development and the Company's development, and staff quality and ability have been effectively improved. In 2020, we achieved "non-stop, high-quality and full coverage" training in the special period. Throughout the year, the Company organized a total of 5,600 face-to-face training projects, of which the head office organized and implemented 158 training projects covering more than 20,000 employees.

In 2020, we

Improved standardized system for on-job training

- Held the first contest for training projects designing, and built a co-constructed and shared platform for talent cultivation
- Initiated the standardized HR position qualification mechanism, and clarified the training system structure and sequence

Pushed ahead "internet + training"

- Developed a smart cloud learning platform integrating mobile learning, training management, and knowledge management – "PetroChina E-learning"
- Implemented 252 network training projects through various methods such as live webcasts, special classes, exams, and online and offline hybrid training, providing effective assistance for the rapid growth of employees

Case Study Carrying out "cloud training" to ensure uninterrupted talent training

During the COVID-19 epidemic, the Company continued to strengthen skilled personnel training. We innovated in training methods and organized high-skilled talents to carry out "cloud training" from "offline" to "online" to ensure talent training remains uninterrupted.

5,600
Implemented 5,600 training programs

277,000
277,000 person-times of participation in face-to-face training

11.084 million
11.084 million person-times of participation in online training

14 million hours
Total training time

40 hours
Average training time per person

100%
The training rate of frontline employees

100%
The training rate of senior skilled personnel and employees in key operating positions

Main training programs of "Four Types of Personnel" in 2020

Managerial Personnel	• Strategic leadership training classes • Training classes for young and middle-aged staff • Training programs for chief accountant • Training programs for department-level managers at key positions
Technical Personnel	• Capability improvement program for candidates of the key talent plan • Trainings held at Tsinghua University, Beijing Institute of Technology and other universities • Demonstration training projects for senior technical talents
International Personnel	• "Thousand People Training Project" for international talents
Skilled Personnel	• Training programs on front-line production innovation methods • Academic seminars for technical experts • Demonstration training classes to improve the comprehensive ability of enterprise team leaders • High-skilled talent demonstration projects • The "Petroleum Craftsman" Development Program

We improve employees' vocational skills and professional abilities through the combination of training and contest such as vocational skills competitions. Through these measures, we promote the development of front-line employees and test the results of grassroots training. In 2020, in addition to enterprise-level vocational skills contests, the company adopted the method of "post training + skills lecture + skills competition", organized and participated in more than 50 vocational skills competitions at all levels and more than 170,000 employees participated in such events. In company-level and above competitions, the participants won 47 gold medals, 75 silver medals, and 112 bronze medals. 7 "National Technical Experts" emerged, and the extraordinary promotion of more than 500 people was achieved.

The 29th Sun Yueqi Energy Science & Technology Award

Ma Xinhua, President of The Research Institute of Petroleum Exploration and Development, won the Energy Award; Feng Chun from PetroChina Tubular Goods Research Institute, and 19 others won the Science and Technology Youth Award

In 2020, we

Participated in

Vocational skill competition

- The first National Vocational Skills Competition
- National Occupational Skills Competition for Ethylene Plant Operators
- The 12th National Petroleum and Chemical Industry Vocational Skills Competition

Innovative approach contest

- The 2nd China Innovation Method Contest

Hosted

Vocational skill competition

- The 2nd National Oil and Gas Development Professional Skills Competition

The first front-line production innovation competition

- The competition is divided into three majors: exploration and production, refining and chemical engineering, and oil and gas sales. 21 first class prizes, 43 second class prizes, and 76 third class prizes are awarded through "innovative achievement display", "innovative method application" and "project tackling mode" and other sections

Provide Unimpeded Career Development Paths

With a corporate culture that values moral integrity as well as professional competence, we have developed a selection process that is democratic, open, competitive and merit-based in order to create a positive atmosphere that enables the recognition and best use of talent. We attach great importance to the career planning of employees and endeavor to expand career development for employees to maximize their self-worth.

In 2020, we continued to promote professional-rank personnel management and improve the mechanisms of dynamic job transfer, appraisal-based recruitment & promotion, and compensation & incentives, to provide technical professionals with independent, unimpeded and stable career development paths. We continued to promote the construction of leading scientific and technological talents and reserve talents. Currently, we have 26 petroleum scientists and 552 young scientific and technological talents. We initiated the skilled personnel development program, and successfully carried out the skills promotion program, innovation/productivity-oriented promotion program and "Petroleum Craftsman" training program for operational personnel.

By the end of 2020, we had

Training of R&D leading talents and reserve talents

26
Petroleum scientists received training

552
Candidates for young technological talents received training

Case Study Liang Nanyu, a poverty alleviation cadre stationed in Shuanghu

Liang Nanyu is the 14th Tibet aid cadre dispatched by PetroChina to Shuanghu. In 2016, he took over the baton of the thirteenth PetroChina cadre in Tibet and participated in poverty alleviation in Shuanghu county. Shuanghu has a low population density with an average of one person per 8 square kilometers. Liang Nanyu traveled to every village in Shuanghu and traveled more than 100,000 kilometers. He shifted the focus of aid to Tibet from infrastructure construction to people's livelihood and industrial development, focusing on cultivating local "hematopoietic" functions. In 2019, Liang Nanyu, whose term of office expired, could not let go of the artemia egg project in progress and the local herders, so he decided to stay for another 3 years!

In 4 years, he worked with the people of Shuanghu to improve medical standards, promote education quality, and develop poverty alleviation industries, and explored "basic research + ecological protection + industrial upgrading" based on China's oil industrial aid poverty alleviation model for Tibet. His work contributed to the development of the county and in 2019, Shuanghu county was no longer an underdeveloped county.

Liang Nanyu was awarded the honorary titles of "Most Beautiful Person to Support Frontier Regions" and "Model of Central Enterprises".

"As a petroleum professional, we must carry on the petroleum spirit, the Daqing spirit and the iron man spirit. If we can let the people at an altitude of 5,000 meters live better, we don't mind suffering a little bit!"

— said Liang Nanyu

LOCALIZATION AND DIVERSITY

At PetroChina, we embrace a respectful, open and inclusive culture and we are committed to "selecting more local talents who live close to our overseas operations, upgrading their professionalism and making them more responsive to market forces". We abide by all laws and regulations of the host countries. We formulated the *Measures for Administration of Local Employees in Overseas Operations* and established an optimal system for recruitment, deployment, performance appraisal, incentives and penalties. We work hard to attract and train top local talents and to provide them with a working environment conducive to their career development.

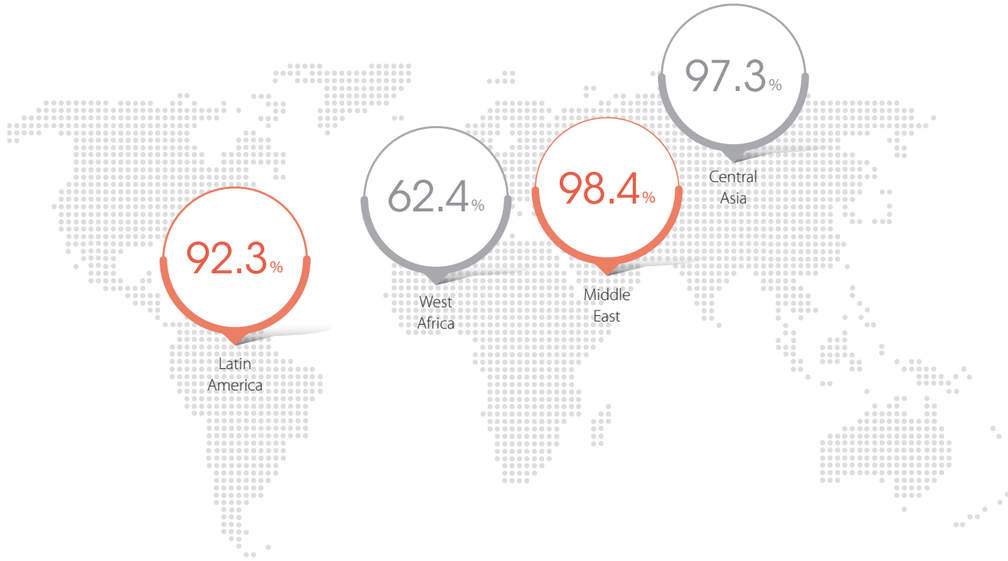
Local Hiring in Overseas Operation

We actively recruit and train local employees and do not discriminate against local candidates for managerial positions, providing local people with job opportunities. Professionals employed in our overseas projects involve multiple disciplines, such as exploration and development, refining and chemicals, pipeline operation, international trade, finance, accounting, and human resources management. In 2020, international and local employees accounted for 95.15% of our overseas workforce.

95.15%

In 2020, international and local employees accounted for 95.15% of our overseas workforce

Proportion of Local Employees in PetroChina's Overseas Business Regions in 2020



Cultural Integration

PetroChina fully respects cultural diversity and local customs. We promote communication and exchanges between employees with different cultural backgrounds, and advocate respect for different values and traditions, in order to foster cross-cultural cooperation in a culturally diverse workplace.

Case Study Abu Dhabi project conducts multicultural management training for multinational companies

The Abu Dhabi project involves a diversified family of employees from Asia, Europe, America, Africa and other countries and regions. The Company organized cross-cultural exchange training programs to help employees of different colors, different cultures and religious backgrounds increase their understanding, and properly cope with cultural collisions in work contacts.

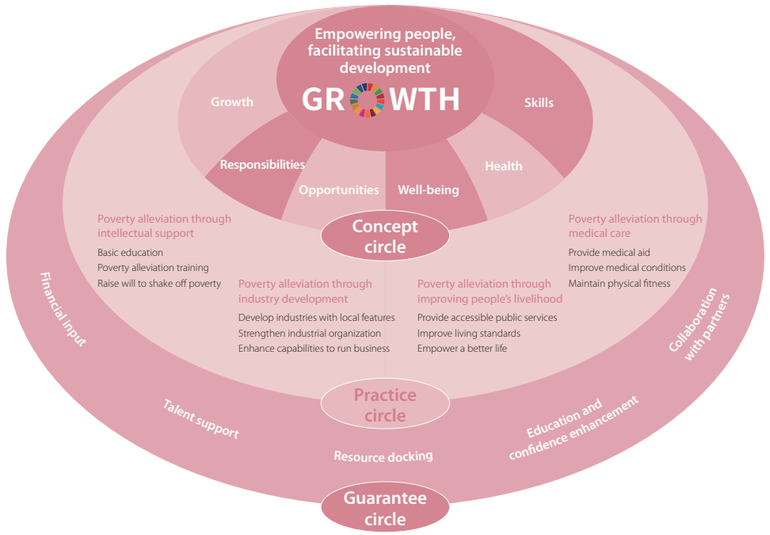
The Company invited the world's top experts to design and carry out a training course on "Multicultural Management of Multinational Enterprises and the Creation of Learning Organizations" with a professional team with a high reputation in the field of cross-cultural communication and training. The course involved "pre-class preparation of questionnaires to grasp trainer information" + "short-term special course teaching" + "one-on-one ability assessment" + "assessment report analysis and improvement", and to assess the work ability of company managers in a multicultural environment. It provides an evaluation and gives suggestions for improvement and enhancement in the form of "one-on-one" to help them improve their work performance, and receive high level of recognition from the trainees.

SOCIAL CONTRIBUTION

As a company rooted within society, PetroChina has a duty to return. Our ultimate goal is to promote socioeconomic development, so we attach great importance to the well-being of people and social advancement. We expand our scale of joint ventures and cooperation, enhance local development capabilities, give donations to impoverished students, and carry out customer satisfaction and community service activities. Through our efforts, we strive to build a harmonious society.

TARGETED POVERTY ALLEVIATION

Poverty alleviation is a major issue for global sustainable development and also one of our key concerns. We respond positively to the initiatives of the *United Nation's 2030 Agenda* for Sustainable Development and to the Chinese government's policies on poverty alleviation targeted at the improvement of people's livelihoods, industrial development, intellectual development and medical care. By leveraging our strengths in terms of industrial resources, we have taken targeted measures to help areas receive assistance to enhance their self-development capacity and promote the sustainable development of the local economy.



PetroChina's "people-oriented" model for poverty alleviation and development

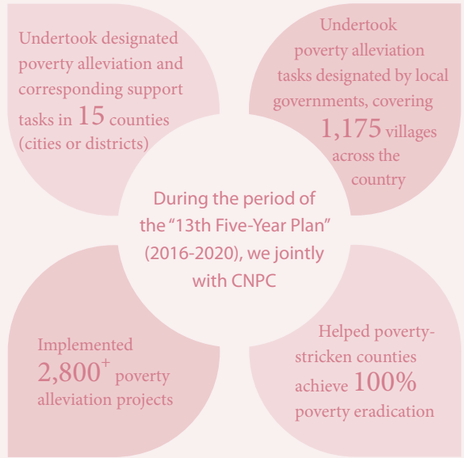
In 2020, together with CNPC, we continued to carry out poverty alleviation and aid programs, and implemented 84 targeted poverty alleviation projects, focusing on promoting industrial cooperation, featured tourism, photovoltaic power generation and education/training in 13 counties/districts in seven provinces (municipalities and autonomous regions) of China, i.e. Xinjiang, Tibet, Qinghai, Chongqing, Henan, Jiangxi and Guizhou, which brought benefits to tens of thousands of people.

PetroChina named by the United Nations Global Compact the "Best Corporate Practices for Achieving the Sustainable Development Goals in 2020"

In 2020, the Company was honored by the United Nations Global Compact as "Best Corporate Practices for Achieving the Sustainable Development Goals 2020 (Poverty Alleviation and Prosperity Promotion)" for its practices and outstanding contributions to poverty alleviation and the protection of women's rights and interests.

TOPIC POVERTY ALLEVIATION AND PROMOTION OF INCLUSIVE AND EQUITABLE DEVELOPMENT

PetroChina has an inherent sense of responsibility and mission for the cause of poverty alleviation, and has put it into practice for long. It strives for sustainable, inclusive, long-lasting and equitable economic growth through business activities. It also actively participates in poverty alleviation under the leadership of the Chinese Government, exploring effective poverty alleviation models and approaches.



Industrial Poverty Alleviation

We have implemented targeted poverty alleviation practices, fostered local industries, created more employment opportunities, enhanced local self-development capacities, and helped the poor to achieve stable income growth and sustainable poverty alleviation. All ten counties where we participated in designated poverty alleviation have passed the national special assessment and examination, achieving poverty eradication successfully.

Case Study "Internet +" for poverty alleviation and opening up the sales channels for Balikun Cantaloupe

PetroChina and China Foundation for Poverty Alleviation jointly created the Shanpin Commune • Balikun Cantaloupe Project in order to make use of the advantages of the cantaloupe industry in Santanghu Town, Balikun, Xinjiang Uygur Autonomous Region. Through the cultivation of cooperative organizations, the cantaloupe industry will be built into an industry with unique advantages. With the help of the Company's capital, technology and business philosophy, the cooperative organizations attracted local farmers to grow green, pollution-free, sweet and crisp cantaloupe, and through the "Internet + poverty alleviation" mode, selected e-commerce logistics platform to achieve online cantaloupe sales.

"Xiaobing Cooperative" as established by Yan Xiaobing joined the Balikun Cantaloupe Project. As of September 2020, "Xiaobing Cooperative" has attracted 110 farmers, the planting bases under it have reached 1,000 mu, and its aggregate sales of cantaloupe have reached 8.6 million yuan.

1,000 mu

"Xiaobing Cooperative" has attracted members of 110 farmers, planting bases under its radiation has reached 1,000 mu

People's Livelihood and Poverty Alleviation

With a view to improve people's livelihoods and quality of life, we focused on solving prominent problems such as weak foundation for public services and difficulties in increasing incomes, and aided the construction of herdsmen's housing, municipal engineering, infrastructure and drinking water irrigation projects, etc.

Photovoltaic Poverty Alleviation

- A total of RMB 7.88 million was invested in the construction of centralized photovoltaic power plant project in Hengfeng County, Jiangxi Province. From commencement of grid-connected power generation to June 2020, the profits reached nearly RMB 1.6 million, and dividends distributed to 16 villages (farms) exceed RMB 1.14 million.
- A total of RMB 6 million was invested in photovoltaic power generation projects (with an annual power generation capacity of 1.3 million kwh) in Taiqian, Henan Province. A yearly distribution of RMB 3,000 was made to 260 registered poverty-stricken households consisting of 884 residents.

Aided Construction of Industrial Facilities

- We invested RMB 28 million in the construction of a tourist highway in Hengfeng County of Jiangxi Province, a highway in Xishuitong village in Guizhou Province, and the tap water plant in Fan County of Henan Province to help promote local economic development.
- We built and maintained a 565 km desert highway across the hinterland of Taklimakan forming a "green corridor in the desert" for the convenience of people's travel.
- We invested RMB 60 million in the construction of ancillary facilities including tourist service centers in Shuanghu County, tourist pedestrian streets and parking lots in county-level towns, and mobile living support equipment, aiming at boosting the development of local tourism industries and promoting herdsmen's stable employment.
- From 2016 to 2020, we implemented a dry-land irrigation project in Nilek and Qinghe County of the Xinjiang Uygur Autonomous Region, covering over 27,000 mu of lands. The output of each mu of agricultural by-products increased nearly threefold, benefiting more than 5,500 poverty-stricken people.

Poverty Alleviation through Medical Treatment

We helped poverty-stricken counties build and improve township hospitals that provide regular rounds of medical checkups, trained rural healthcare workers, and took various measures to improve medical conditions in poverty-stricken areas. We innovated in terms of medical assistance, providing health and medical insurance for the poor and subsidizing the treatment and rehabilitation of the poor to reduce the relevant burden on families.

- We invested RMB 3 million and implemented the "Tongzhou" program in cooperation with China Foundation for Poverty Alleviation and Aiyou Foundation, of which we donated RMB 2 million to help treat critical illnesses of people aged 20-60 in Hengfeng, Jiangxi Province and Xishui, Guizhou Province.
- We purchased insurance for 76,528 registered households in Xishui County, Guizhou Province.
- For eight consecutive years, we trained more than 2,400 person-times for rural doctors in 11 counties, including Shuanghu County of Tibet and Lenghu County of Qinghai Province.

Poverty Alleviation through Intelligence Development

We focused on key areas including building the capacity of grassroots managers, improving their labor skills, innovation-based entrepreneurship and business management capability, in order to comprehensively enhance the reserve of talents in areas of poverty alleviation and their ability to get rich. By virtue of "Xuhang Program" and "Teacher Training Program", we enhanced the cultural quality and development capacity of the population in poverty-stricken areas by providing training to primary and secondary school students, teachers, and management personnel.

Training for grassroot management and governance	• We trained 9,000 grassroot managers in cooperation with the China National School of Administration and the Rural Party Branch College.
Training for Innovation-based Entrepreneurship and Business Management Capability	• We cooperated with the China Foundation for Poverty Alleviation and other institutions and colleges to set up training courses on modern agriculture and other skills, and trained an aggregate of 40,000 person-times including leaders of poverty alleviation and prosperity achievement and professional technicians. • We worked with Alibaba and other e-commerce platforms to launch 14 training sessions on e-commerce and rural tourism for poverty alleviation. More than 700 persons received the training sessions, among which over 100 persons participating in the training sessions for cooperatives are backbones or leaders of poverty alleviation and prosperity achievement.
Faculty Capacity Building	• We carried out training programs such as the "Teacher Training Program" and trained an aggregate of over 7,700 person-times in education profession.
Training for Improving Labor Skills	• We carried out training programs on skills such as auto repair and confinement nurse, and trained over 2,000 person-times.

WIN-WIN COOPERATION

While providing a stable energy supply for national economic and social development, we follow the principle of open and win-win cooperation, expanding our joint ventures and cooperation with local businesses. Meanwhile, we engage and develop local suppliers and contractors when possible during the construction and operation process, thereby creating jobs and driving the growth of related businesses, and giving back to local people.

11

Established 11 new mixed ownership enterprises

PetroChina's outstanding JV projects in 2020

The Company actively and steadily promoted the joint venture projects of the whole industry chain, focused on improving the joint venture platform of refining, sale and natural gas pipeline system, promoted the pragmatic cooperation with private capital, financial capital, social capital and international companies in a comprehensive, multi-level and multi-method manner and played the concentration and amplification effect of capital.

In 2020, we:

- Established 11 new mixed ownership enterprises
- Made capital replenishment into Wuhan City Natural Gas High Pressure Pipeline Network Co., Ltd.
- Acquired equity interests in gas projects of Xinjiang Xintai Natural Gas Co., Ltd.
- Established a joint venture with CNOOC, Zhaotong Municipal Government of Yunnan Province to promote the development of local economy.

TOPIC CONCERTED EFFORTS TO FIGHT AGAINST THE OUTBREAK OF COVID-19 AND OVERCOME DIFFICULTIES

No one is immune to crises in an interconnected global village. After the outbreak of COVID-19, PetroChina promptly set up an epidemic prevention and control team, and worked together with the government, employees, business partners, communities, and customers to fight the epidemic. While preventing and controlling the epidemic and resuming production, the Company also exerted its industrial and resource advantages to support the overall situation of national epidemic control, spared no efforts to ensure the oil and gas supply in the key areas of epidemic prevention and control, switched to and expanded the production of medical materials, served the supply of local people's livelihood by relying on gas stations and uSmile convenience stores, and actively supported recovery of the local economy.

In 2020, the Company achieved "no epidemic" and "zero case" in the workplace, effectively safeguarding the safety and health of employees. We donated an aggregate of RMB 100.01 million of anti-epidemic funds and materials, switched to and expanded the production of 657,000 tons of medical materials, produced 1,259 tons of melt-blown materials and over 800 tons of melt-blown nonwovens, and produced 140 million masks. We strengthened investment cooperation and enlarged employment opportunities in key areas of the epidemic outbreak, providing jobs for college graduates and migrant workers and employing 3,000 more people than in 2019. As the nearest gas station to Wuhan Jinyintan Hospital and Wuhan's largest square cabin hospital, which provided treatment to critically ill patients, the PetroChina gas station on Hongtu Avenue of Wuhan provided 24-hour service during the epidemic outbreak, providing convenience to medical staff, which made it the only gas station in China that was awarded "National Leading Unit in Fighting COVID-19 Epidemic".

We are confident that with the concerted efforts of all parties, humanity will eventually overcome the COVID-19 and usher in a better tomorrow. PetroChina will continue to work with other stakeholders to defend and control the epidemic and achieve economic recovery, contributing to the health and safety of the people as well as the prosperity and stability of the national economy.

140 million

Produced an aggregate of 140 million masks

RMB 100.01 million

Donated an aggregate of RMB 100.01 million of anti-epidemic funds and materials

657,000 tons

Switched and expanded production by 657,000 tons of medical materials

3,000

Number of people employed increased by 3,000 over 2019

Giving full support to the epidemic prevention and control

- In January 2020, PetroChina donated RMB 50 million to Hubei Charity Federation.
- From February to April 2020, PetroChina supplied natural gas with a total value of RMB 20 million to 39 designated hospitals for COVID-19 treatment in Hubei Province.
- PetroChina coordinated subordinated enterprises to fully support efforts by local government to fight against the epidemic, donated a large number of protective clothing, N95 medical masks, disinfection supplies and other protective materials and daily necessities to all cities of the country, especially Wuhan, and purchased a large number of scarce medical materials to assist the front line of epidemic prevention and control efforts.
- PetroChina's employees voluntarily donated RMB 73.18 million for solicitudes to the frontline personnel in the fight against the epidemic outbreak.

Enhancing overall oil and gas support

- PetroChina actively coordinated the supply channels in Hubei Province to ensure 24-hour uninterrupted supply at all of its gas stations during the lockdown of Wuhan.
- By April 8 2020, when lock-down measures for Wuhan were lifted, 226,500 tons of petroleum products had been supplied to 625 gas stations in Hubei Province, of which 16,900 tons were supplied for ambulances and 44,700 tons for vehicles of epidemic fighting; and a total of 1.2 billion cubic meters of natural gas were supplied to Hubei Province.

Efficiently supporting hospital construction

- We provided 26.12 tons of oil products for Huoshenshan Hospital at its construction site and 120.58 tons for square cabin hospitals; coordinated with business partners to donate 300 tons of diesel.
- We completed the relocation and reconstruction of the 300-meter pipeline of Huoshenshan Hospital in 8 hours and urgently laid 1,802 meters of temporary pipeline to designated hospitals in Huangshi and Shiyan areas so as to provide energy support for the construction and operation of designated hospitals.

Unblocking the supply chain for people's livelihood

- We promptly optimized supply plan and made sure the 24-hour supply of life necessities (such as rice, flour and oil) and rescue materials via gas station convenience stores and other channels during the lockdown.
- We carried out door-to-door delivery and heartwarming activity in Hubei Province and distributed 10,800 bills of living supplies to residents, providing guarantee and services for living supplies in epidemic-stricken areas.

Switching to and expanding production of medical materials to support epidemic prevention

- We quickly organized research institutes and manufacturing units to jointly solve key problems in producing melt-blown materials. Refineries spared no efforts to ensure the operation of polypropylene facilities at full load with an accumulative output of 657,000 tons of medical materials.
- We made every effort to urgently build up melt-blown nonwovens production lines, and produced over 800 tons of melt-blown fabric.
- Four enterprises including Daqing Petrochemical, Lanzhou Petrochemical, Fushun Petrochemical and Daqing Oil Field built 22 automatic mask production lines and achieved an accumulative production of 140 million masks with the maximum daily production of over 1.2 million masks.

Promoting Economic Recovery of Hubei Province

- We launched our annual recruitment campaign to provide jobs for college graduates, migrant workers, etc. We offered preferential recruitment initiatives to Hubei Province by increasing 3,000 job vacancies over those in 2019.
- We strengthened support for project cooperation as well as work resumption in Wuhan, and implemented a strategic cooperation agreement with the Wuhan Municipal Government to strengthen cooperation in major projects.
- Regional marketing companies gave priority to non-oil products supplied by Hubei Province, and uSmile convenience stores and the online mall were motivated to sell the products from Hubei. A total of nearly RMB 20 million Hubei products were sold within two months. This helped relieved Hubei from the stress caused by dull of sale amid the epidemic.

Actively assisting overseas communities in epidemic prevention

- We actively provided all kinds of epidemic prevention and control services to overseas communities by releasing videos for epidemic prevention and control, sharing epidemic prevention experiences with the public, and exchanging epidemic prevention and control information with embassies and consulates, local governments, media, and business partners.
- We urgently raised 20,000 medical surgical masks, 500 bottles of disinfectant hand sanitizer, 100 suits of protective clothing, 20 medical thermometers and other epidemic prevention materials to assist the Federal Ministry of Electricity and Energy in Myanmar in epidemic prevention and control.
- Our Halfaya project in Iraq compiled an Arabic version of COVID-19 prevention and control handbook, distributed more than 15,000 copies of this handbook door to door in 7 villages within the oil field, and patiently briefed the villagers on epidemic prevention and control knowledge.

OVERSEAS COMMUNITY CONSTRUCTION

We respect the cultures and conventions of the host countries in which we operate, and we are committed to establishing long-term and stable cooperative relations with the host countries. We take an initiative to incorporate our development into local socioeconomic growth and create economic and social value to jointly promote the development and prosperity of local communities together with host governments and business partners.

Enhancing Communication with Local Communities

We have set up environmental protection and community relation coordination departments in many overseas areas and have developed communication channels in different forms with local governments, NGOs and community representatives. By holding conferences, issuing reports and paying visits, we strengthen communication and coordination and achieve a win-win cooperation.

Community Welfare

We take an active role to help improve the production and living conditions of local residents, give donations to education, and carry out public welfare programs with respect to hygiene and healthcare to achieve harmonious and mutual development. In 2020, the Company built 5km asphalt road for Muair Village in Halfaya, Iraq, solving the traveling problems for over 1,500 local villagers. We actively helped host countries fight against the epidemic by providing necessary materials, services and experiences. In Peru, we established a joint prevention and control mechanism together with local government and communities to fight against the epidemic together, and donated protective equipments to local community governments many times, which was highly recognized by local government and community residents.

Case Study Women's health volunteer project

In 2020, the Company launched a female health volunteer project in Rumaila, Iraq. Through a series of health and hygiene focused activities, we provided families in the community with relevant health knowledge and guided them on the path of living a healthy life. The project also helped community residents to detect health problems at an early stage and provided medical advice. In 2020, the Company selected and recruited 43 volunteers, and provided relevant training to help them master professional hygiene and health knowledge, as well as related disease symptoms, in order to serve the families in the community to the greatest extent possible. Volunteers visited nearly 1,000 homes on average every month, benefiting more than 4,000 residents in the area.

Protect Local Environment

We strongly believe in the importance of striking a balance between business development and environmental protection. Therefore, we strictly comply with the laws and regulations of host countries and international standards on environmental protection and carefully protect the local ecological environment during operations.

Case Study Restoration of soil and surface vegetation in Kazakhstan

Kazakhstan is rich in land resources, but most areas are located in arid areas, with annual precipitation of less than 300 mm. Preventing land desertification has become one of the priority goals of Kazakhstan's sustainable development strategy. China Petroleum International (PK) Co., Ltd. adopted advanced bioremediation technology to implement restoration projects on 4.2 acres of historically abandoned land, restored the contaminated soil and surface vegetation and met the government's environmental protection requirements.

Promote Localization

We proactively promote localization and take the procurement of local products and local services as priority in order to offer local contractors and service providers a chance to participate in the projects, promoting the development of local small and medium-sized enterprises and creating employment opportunities for the local communities. Over 20 years since 1997 when PetroChina began oil and gas cooperation in Kazakhstan, we have invested USD 30.1 billion in oil and gas development in Kazakhstan and contributed over USD 48 billion in tax revenue.

USD 48+ billion

Invested USD 30.1 billion in oil and gas development in Kazakhstan and contributed over USD 48 billion in tax revenue

For more information on the *Tax Policy of PetroChina Company Limited*, please visit the Company's website.

Tax Payments According to Law

PetroChina strictly complies with the laws and regulations in the countries where it operates, pays taxes to local governments according to law, and duly contributes to the development of local economies. In countries where the Extractive Industries Transparency Initiative (EITI) standard is implemented, such as Iraq and Mongolia, our local companies actively participate in the multi-stakeholder groups and publish information on our projects and tax payments to provide details that far exceed the minimum disclosure requirements prescribed by the EITI. We support and follow the Base Erosion and Profit Shifting (BEPS) initiative and the *PetroChina Tax Policy* and pledge to pay tax according to the law in areas where we operate and create value, in order to strive to achieve sustainable development and to duly contribute to socioeconomic development.

Protect Indigenous Rights

Before the commencement of a project, we conduct assessments of the social and economic impact in relation to the needs of indigenous people, human rights, cultural heritage and involuntary resettlement. We try our best to protect all the legal rights and interests of the indigenous people. We uphold standard operation in land compensation and formulate compensation plans by taking into account the opinions of the local governments, our partners and the local residents in order to protect the interests of the indigenous people. Specifically, compensation is paid before land use, and the compensation information is released in a timely manner to ensure operational transparency.

Case Study Bringing the source of life to the residents of the desert

Water is the source of life. Niger is a landlocked country, mostly composed of deserts, with low annual average rainfall and a severe water shortage. In order to alleviate the problem of drinking water, PetroChina made a tailor-made wells construction assistance plan through investigation and analysis of the distribution and conditions of water sources in local communities.

In 2020, PetroChina drilled water wells in 35 villages that are in short supply of water, such as Kouani, Santi, and Teleli. With deep aquifers in desert areas, drilling wells is more difficult than ordinary places. In the early stage of well construction, we inspected and selected well construction contractors to ensure that the well construction meets quality standards. We provided repairing services when necessary.

The use of wells has solved the difficulty of drinking water for local residents, and also reduced the burden on local women and children. More children have the opportunity to enter the classroom to learn. Residents often say "the most beautiful "jewelry" in the desert is undoubtedly water. PetroChina has sent us the most beautiful jewelry."

CUSTOMER SERVICE

As a leading producer and supplier of petroleum and petrochemical products in China, PetroChina continues to optimize its product structure and improve its product quality, while upholding the principle of pursuing integrity and excellence in quality control. We endeavor to enhance quality management continuously by focusing on the formulating, development and revision of standards, supervision and inspection, and nurturing a culture of quality, in order to provide customers with clean, high-quality and diversified products and services.

Product Quality and Safety

We provide consumers with products that meet legal requirements and standards with a high sense of responsibility. In the process of product supply, we comprehensively consider its impact on the consumers and ensure the product quality and safety. We strengthen product quality inspections, and conduct inspections over raw materials, intermediate products and end products. Especially the manufactured products must be inspected before they are allowed to leave the factory. In order to ensure the accuracy and reliability of the inspection data, we persist in regularly conducting verification and calibration of instruments and equipment in accordance with the requirements. We attach great importance to communication with customers, inform them in detail of the performance and physical and chemical indicators of products, and formulate strict procedures for products that need to be recycled to prevent adverse effects on the environment.

The Company strictly abides by quality management laws and regulations and has formulated specific management regulations and implementation rules covering the entire enterprise, all the staff and the whole process. In 2020, we strengthened and improved product and service quality standards, and strived to provide consumers with diversified and high-quality products. We developed 87 new brands of chemical products throughout the year with an output of 820,000 tons.

Key Progress of Quality Management in 2020

Focus	Description
Improve product quality	• 25 aviation fuel production companies have passed the airworthiness certification of civil aviation fuel issued by the Civil Aviation Administration • 4 sets of jet fuel production equipment have passed the jet fuel certification of the National Aviation (Naval) Fuel Appraisal Committee, adding 2.66 million tons of jet fuel per year • Carried out quality supervision and random inspections such as special inspections of national VIB oil quality focusing on external oil production
Initiated centralized improvement of oil, gas and water well quality	• Prepared the Company's "Three-year Action Plan for Centralized Improvement of Oil, Gas and Water Well Quality" • Initiated the implementation of 4 special rectification actions including casing damage well and casing deformation well • Established the Company's oil (gas) well engineering quality supervision station • Clarified the seven red lines for the determination of unqualified well quality and cementing quality
Carried out quality culture construction	• 10,800 QC teams, 3,626 teams, 187,000 people participated in mass quality activities • Over 350,000 employees attended the quality management contest organized by the State Administration of State-Owned Assets Commission • Conducted customer satisfaction surveys

100%
The pass rate for third-party certification on quality management system

Consumers' Rights and Interests

We strictly abide by such applicable laws, regulations and international standards relating to advertisements, labelling and privacy of products and services as the *Law of the People's Republic of China on Protection of Consumers' Rights and Interests and the United Nations Guidelines for Consumer Protection*. The Company established customer data management rules and acted in strict accordance with the rules in the management and use of customer data, so as to protect security and privacy of consumer data.

97.0%
The satisfaction rate derived from follow-up via PetroChina's customer service hotline 95504

According to the 2020 China Brand Power Index[SM] (C-BPI) brand ranking and analysis report released by Chnbrand, a renowned brand rating institute, PetroChina's overall rating ranked the first for the fourth consecutive year.

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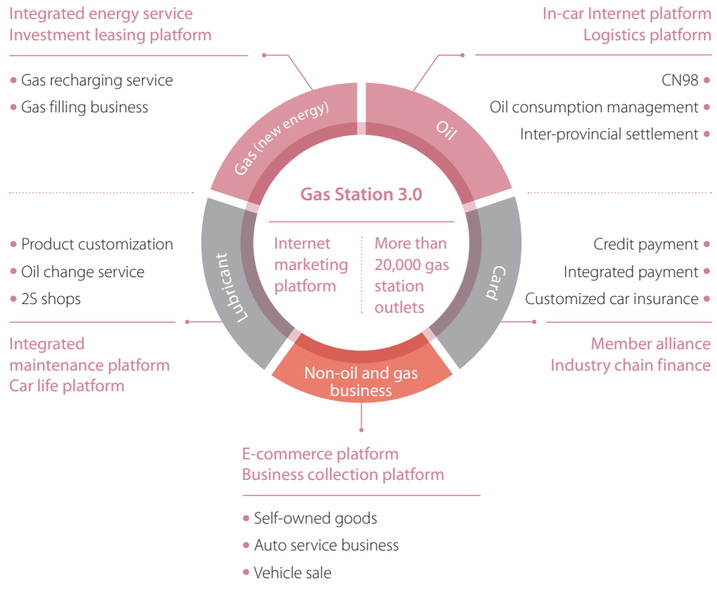
In 2020, the Company's oil product retail network covered 31 provinces (municipalities and autonomous regions) and the Hong Kong SAR of China nationwide.

Value-added Service

For customer satisfaction, we work hard to improve our service network and its functions. In 2020, we actively built smart gas stations, steadily promoted the construction of Gas Station 3.0, and carried out full-process zero-contact refueling services, and strived to meet the all-round consumption experience of "people, cars, and life".



Case Study PetroChina Launched Exclusive Discounts for Medical Staff

In order to express our appreciation to the medical staff on the front line of the fight against the epidemic, PetroChina launched the "Salute to Medical Staff, Cheer for the Angels in White" charity campaign, and launched the "Angel Card" campaign to give medical staff and hospitals across the country free special preferential refueling cards with substantial discounts. Not only that, medical staff can also enjoy a variety of services such as discounts on shopping in convenience stores, gifting of electronic gasoline coupons, and complimentary car washing at PetroChina's self-operated gas stations.

PERFORMANCE DATA

Category	Indicator	2018	2019	2020
Governance	The Diversity of the Board of Directors			
	Independent directors (%)	-	-	45.5
	By gender (%)			
	- Male (%)	-	-	90.9
	- Female (%)	-	-	9.1
	Professional background (%)			
	- Legal	-	-	9.1
	- Finance/accounting	-	-	18.2
	- Economics	-	-	18.2
	- Petrochemical	-	-	54.5
	Coverage rate of compliance training (%)	-	-	100
	Number of concluded corruption lawsuits	-	-	12
Safety	Fatal Accident Rate (person/100 million working hours)	0.14	0.07	0.08
	Total accident rate (incidents/million working hours)	0.0414	0.0562	0.0495
	Fatalities	4	2	2
	Loss of working days due to work-related injury	9,971	6,150 ①	6,806
Climate Change	Energy consumption			
	Total energy consumption (10^4 TCE)	8,440	8,703	8,850
	Total raw coal consumption (10^4 TCE)	1,267	1,268	1,289
	Total crude oil consumption (10^4 TCE)	186	180	172
	Total natural gas consumption (10^8 m^3)	181	185	187
	Total electricity consumption (10^8 kwh)	542	563	553
	Energy saved (10^4 TCE)	81	78	76
	Comprehensive energy consumption for producing unit volume of oil and gas equivalent (kg of standard coal/ton)	122	119	118
	Unit energy factor consumption for refining (kg standard oil/ [ton · factor])	7.81	7.68	7.57
	Fuel and power consumption for producing ethylene products (kg of standard coal/ton)	592	580	571
	GHG			
	Total GHG emissions (10^6 tons of CO_2 equivalent)	-	174.08	167.44
	- Direct GHG emissions (10^6 tons of CO_2 equivalent)	-	132.17	127.57
	- Indirect GHG emissions (10^6 tons of CO_2 equivalent)	-	41.91	39.87
	Domestic GHG emissions per unit of oil and gas production (metric ton of CO_2 equivalent/ton)	-	-	0.28
Environment	Water			
	Fresh water consumption (10^4 m^3)	80,005	79,383	76,995
	Year-on-year change in fresh water consumption (%)	1.11	-0.78	-3.01
	Fresh water consumption for processing 1 ton of crude oil (m^3)	0.51	0.52	0.515
	Water saved (10^4 m^3)	1,076	980	944
	Land Resources			
	Land saved (hectare)	1,253	1,247	1,190
	Pollutants Emissions			
	COD emissions (10^4 tons)	2.57	2.44	2.35
	SO_2 emissions (10^4 tons)	10.40	9.38	8.84
	NH_3-N emissions (10^4 tons)	1.00	0.87	0.83
	NO_x emissions (10^4 tons)	9.66	8.90	7.76

① The statistic is revised due to the delay of the closing time of some accidents

Category	Indicator	2018	2019	2020
Employees	Number of employees (10^4)	47.62	46.07	43.20
	Localization and Diversity of Employees			
	Percentage of female staff (%)	29.82	28.79	27.52
	Percentage of female administrative staff (%)	7.35	7.44	7.28
	Percentage of ethnic minority employees (%)	6.51	6.53	6.61
	Percentage of foreign employees in overseas projects (%)	92.7	94.23	95.15
	Workforce by age			
	25 years old and below (%)	-	-	1.29
	26-35 years old (%)	-	-	12.56
	36-45 years old (%)	-	-	27.35
	46-55 years old (%)	-	-	49.08
	56 years old and above (%)	-	-	9.72
	Percentage of full-time employees (%)	-	-	100
	Workforce by position			
	Administrative staff (%)	27.71	28.51	28.57
	Professional and technical staff (%)	13.90	13.94	14.08
	Operating staff (%)	58.39	57.55	57.35
	Workforce by education			
	Master's degree and above (%)	3.83	4.03	4.23
	Bachelor's degree (%)	32.87	33.99	34.82
	College degree (%)	23.16	22.98	22.80
	Technical secondary school and below (%)	40.14	39.0	38.15
	Employees who took maternity/paternity leave returned to work and retained posts (%)	100	100	100
	Detection rate of workplace occupational hazards (%)	99.99	99.28	99.33
	The establishment rate of employee occupational health monitoring archives (%)	100	100	100
	Percentage of employees receiving occupational health checks (%)	99.97	99.62	99.25
	The average training time per person (hour)	-	-	40
	The training rate of front-line employees (%)	100	100	100
	Training rate of senior skilled personnel and personnel at critical operation posts (%)	100	100	100
	Staff turnover rate	-	-	0.27
Communities	Taxes (RMB 10^8)	3,672	3,536	2,812
	Overseas Tax (RMB 10^8)	401	429	238
	Pass rate of third-party certification of quality management system (%)	100	100	100
	Number of material suppliers	25,420	23,623	23,699
	Procurement expenditure (RMB 10^8)	1,924	2,180	1,683
	Public welfare			
	Contribution to poverty alleviation (RMB 10^4)	9,398	13,760	11,954
	Educational donations (RMB 10^4)	4,031	2,768	2,656
	Donations to disaster relief (RMB 10^4)	1,149	2,058	1,172
	Environmental protection (RMB 10^4)	4,860	4,383	375

Notes: the Company is actively promoting limited independent assurance

1 BOE = 1 barrel of crude = 6,000 cubic feet of NG = 169.9 cubic meter of NG

1 cubic meter of NG = 35.315 cubic feet of NG

1 metric ton of crude = 7.389 barrels of crude (API = 34)

OBJECTIVES AND PLANS

In 2021, we will firmly establish and implement new development concepts. To build a top-class company, we will establish first-class standards for business development, reform and innovation, and the building of a harmonious enterprise, making solid and effective progress in all aspects, and continuously acquire new achievements.

Aspects	2021 Main Objectives	2021 Action Plans
Corporate governance	• Improve corporate governance • Promote management upgrade • Deepen the supply front structural reform	• Improve the Company's sustainability management to effectively control ESG risk • Improve corporate governance framework • Strengthen compliance management in key areas • Consistently promote the construction of internal control system • Strictly implement anti-corruption laws and regulations such as the Supervision Law • Strengthen communication and participation with stakeholders such as the investors
Energy and environment	• Natural gas accounts for 47.8% of the Company's oil and gas output equivalents • The total emissions of major pollutants fully meet the State's examination requirements • Realize energy saving greater than or equal to 0.56 million tons of standard coal • Water saving greater than or equal to 7.0 million cubic meters	• Intensify the development and utilization of clean and low-carbon energy • Strengthen the implementation of pollution prevention and control measures in key areas and strengthen the coordinated management and control of greenhouse gases and volatile organic compounds • Implement energy-saving and water-saving goals and responsibilities, strengthen the exchange of energy-saving and water-saving technologies to promote application and carry out the construction of energy efficiency benchmarking teams to help the company improve quality and efficiency
Employee development and interests	• Build excellent groups of managers and talents • Improve the mechanism for employee compensation to secure the safety of personnel and property	• Devote more to the selection and training of young managers • Strengthen all-staff education and training to improve overall quality • Improve the differentiated performance appraisal mechanism and market-based compensation allocation mechanism, continue to promote the pilot application of the professional manager system • Innovate the mode of employment and properly arrange redundant personnel • Strengthen overseas risk assessment and early warning, and enhance terrorism emergency response capabilities
Social contribution	• Promote the steady growth of national economy, earnestly fulfill social responsibilities and actively participate in public welfare undertakings	• Support the preparations for 2022 Beijing Winter Olympics • Maintain close communication and coordination with local governments, and support and drive the local economic and social development

TCFD RECOMMENDATIONS INDEX

TCFD Framework	Page Number
Governance	
a) Describe the board's oversight of climate-related risks and opportunities.	P26
b) Describe management's role in assessing and managing climate-related risks and opportunities.	P26
Strategy	
a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	P27-29
b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	P22-23
c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	P22-29
Risk Management	
a) Describe the organization's processes for identifying and assessing climate-related risks.	P26
b) Describe the organization's processes for managing climate-related risks.	P26
c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	P10
Metrics and targets	
a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	P30-33, P73
b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	P73
c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	P30-37

GLOBAL COMPACT AND US

The Global Compact is a global framework initiated and advocated by the United Nations aimed at the promotion of sustainable development and the collective improvement of social well-being through responsible and innovative business practices. As a member of the UN Global Compact, PetroChina is committed to observing and supporting the Ten Principles of the UN Global Compact in the areas of human rights, labor, environment and anti-corruption. We will always follow the Ten Principles in our practices for fulfilling social responsibilities, and consistently disclose the compliance thereof in our annual report.

	Ten Principles in the Global Compact	Corresponding Sections Herein
Human Rights	1. Businesses should support and respect the protection of internationally proclaimed human rights	1.1 Sustainability management 3.1 Employee Rights and Interests 4.3 Overseas Community Construction
	2. Make sure that they are not complicit in human rights abuses	3.1 Employee Rights and Interests
Labor Rights	3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining	3.1 Employee Rights and Interests
	4. The elimination of all forms of forced and compulsory labor	3.1 Employee Rights and Interests
	5. The effective abolition of child labor	3.1 Employee Rights and Interests
	6. The elimination of discrimination in respect of employment and occupation	3.1 Employee Rights and Interests
Environment Protection	7. Businesses should support a precautionary approach to environmental challenges	2.1 Energy Transition 2.2 Response to Climate Change
	8. Undertake initiatives to promote greater environmental responsibility	Message from the Chairman 2.2 Response to Climate Change 2.3 Clean Energy Development 2.4 Ecological Environmental Protection
	9. Encourage the development and diffusion of environmentally friendly technologies	2.2 Response to Climate Change 2.3 Clean Energy Development
Anti- Corruption	10. Businesses should work against corruption in all its forms, including extortion and bribery	Corporate governance

GRI, IPIECA/API AND HKEX INDEX

The table below provides a contrast of indicators of the Oil and Gas Industry Guidance on Voluntary Sustainability Reporting by the International Petroleum Industry Environment Conservation Association (IPIECA)/American Petroleum Institute (API), the Global Reporting Initiative (GRI), and the Environmental, Social and Governance (ESG) Reporting Guide issued by the Hong Kong Stock Exchange.

Contents		IPIECA/API (2020)	GRI	ESG
About Us			102-1, 102-2, 102-3, 102-4, 102-5, 102-6, 102-7, 102-16, 102-45	B6
PetroChina and the 2030 Sustainable Development Goals of the UN				
Message from the Chairman			102-14, 102-15, 102-16, 201-2, 203-2	B1
Corporate Governance	Sustainability Management	GOV-1	102-14, 102-15, 102-32, 102-35, 103-2, 103-3	
	Governance Framework	GOV-1	102-18, 102-19, 102-20, 102-22, 102-23, 102-24, 102-25, 102-26, 102-27, 102-28, 102-30, 102-31, 102-32, 102-33, 102-36, 405-1	
	Management System	SOC-8, GOV-1, GOV-3	102-16, 102-17, 205-2	B7, B7.2
	Supply Chain Management	SHS-1, SOC-2, GOV-3	102-9, 102-10, 414-1, 414-2	B5, B5.1, B5.2
	Communicating and Interacting with Stakeholders	SOC-11	102-21, 102-29, 102-33, 102-34, 102-40, 102-42, 102-43, 102-44	
Energy and the Environment	Energy Transition	CCE-1	102-15	
	Response to Climate Change	CCE-1, CCE-2, CCE-4, CCE-5, CCE-7	102-12, 201-2, 203-1, 301-2, 302-1, 305-1, 305-2, 305-4, 305-5	A1, A1.2, A1.5, A2.3
	Clean Energy Development	CCE-2	203-1	
	Ecological Protection	ENV-1, ENV-2, ENV-3, ENV-4, ENV-5, ENV-6, ENV-7, ENV-8	102-11, 203-1, 302-1, 302-3, 302-4, 303-1, 303-3, 304-1, 304-2, 304-3, 305-6, 305-7	A1.3, A1.6, A2, A2.2, A2.4, A3, A3.1
Employee Development and benefits	Employee Rights and Interests	SOC-6	102-8, 102-52, 401-1, 401-3, 405-1, 407-1, 408-1, 409-1	B1, B1.1, B4, B4.1
	Health and Safety	SHS-1, SHS-2, SHS-4, SHS-5, SHS-6, SHS-7, SOC-2	403-3	B2, B2.1, B2.3
	Employee Development	SOC-4, SOC-7	404-1, 404-2	B1, B3, B3.1, B3.2
	Localization and Diversity	SOC-4, SOC-5, SOC-15	202-2, 405-1	B1
Social Contribution	Targeted Poverty Alleviation		203-1, 203-2	B8, B8.1, B8.2
	Win-win Cooperation		203-1, 203-2	B8, B8.1, B8.2
	Overseas Community Construction	SHS-1, SHS-2, SOC-4, SOC-5, SOC-9, SOC-10, SOC-11, SOC-14, GOV-4	201-1, 203-1, 203-2, 204-1, 411-1, 413-1	B8, B8.1, B8.2
	Customer Service	SHS-5, SHS-6	416-1, 416-2, 417-1	B6, B6.1, B6.2, B6.3, B6.4, B6.5
Performance Data		CCE-4, CCE-6, ENV-1, ENV-2, ENV-5, SHS-1, SHS-2, SOC-4, SOC-5, SOC-7, SOC-13, SOC-15, GOV-4	201-1, 302-1, 302-3, 302-4, 305-1, 305-2, 305-4, 305-6, 305-7, 403-2, 405-1	A1, A1.1, A1.2, A1.5, A2.1, A2.2, A2.3, A2.4, B1.1, B1.2, B2.1, B2.2, B3.1, B7.1, B8.2
Objectives and Plans				

Contents	IPIECA/API (2020)	GRI	ESG
TCFD Recommendations Index			
Global Compact and Us		102-13	
Appendix		102-54, 102-55	A1, A2, B1, B2, B4, B5, B6
Reporting Methods and Principles		102-45, 102-46	
About this Report		101-1, 101-2, 101-3, 102-48, 102-49, 102-50, 102-51, 102-52	
Contacts		102-53	

This report is in compliance with the "comply or explain" provisions under the HKEX's ESG *Reporting Guide*. The undisclosed indicators in KPI A1.4, KPI A2.5 and some of the disclosed indicators in KPI A1.3 are interpreted as follows:

1. With resource efficiency and recycling as the core, the Company actively promotes the comprehensive utilization of solid waste, improves comprehensive utilization efficiency, and reduces waste discharge. The Company further strengthens the systematic control of solid waste generation, collection, storage, utilization, transportation, and disposal to ensure the legal compliance of solid waste management.
2. KPI A2.5 does not apply to the nature of the Company's products.

APPENDIX

We strictly complied with applicable laws and regulations on quality management. For this, we established rules and regulations covering all production units, staff and processes relevant to the Company, including but not limited to:

1	*Measures of PetroChina Company Limited for Management of Labor Contract*
2	*Measures of PetroChina Company Limited for Performance Evaluation of Company Leaders*
3	*Administration Measures of PetroChina Company Limited on Production Safety and Environmental Protection Accountability System*
4	*Administrative Measures of PetroChina Company Limited for Supervision and Inspection of Product Quality*
5	*Administrative Measures of PetroChina Company Limited for Appraisal of Staff Safety and Environmental Performance*
6	*Regulations on Environmental Protection Management of PetroChina Company Limited*
7	*Measures for Environmental Monitoring and Environmental Information Management of PetroChina Company Limited*
8	*Regulations of PetroChina Company Limited on Environmental Protection Concerning Project Acquisition*
9	*Administrative Measures of PetroChina Company Limited for Energy and Water Conservation*
10	*Regulations of PetroChina Company Limited on Quality Supervision of Procured Materials*
11	*Regulations of PetroChina Company Limited on Detection of Occupational Hazards at Workplace*
12	*Regulations of PetroChina Company Limited on Occupational Health Surveillance*
13	*Measures of PetroChina Company Limited for Material Supplier Management*
14	*Measures of PetroChina Company Limited for Tender Management*
15	*Measures of PetroChina Company Limited for Service Trademark Management*
16	*Measures of PetroChina Company Limited for Land Management*
17	*Regulations of PetroChina Company Limited on the Management of Industrial Water of Refining Enterprises*

APPROACH TO AND PRINCIPLES OF REPORTING

The preparation of this report complies with the *Environmental, Social and Governance (ESG) Reporting Guide* issued by the Hong Kong Stock Exchange, the *Oil and Gas Industry Guidance on Voluntary Sustainability (2020))* co-published by the International Petroleum Industry Environmental Conservation Association (IPIECA) and the American Petroleum Institute (API), the *Recommendations of the Task Force on Climate-related Financial Disclosures* issued by the Task Force on Climate-Related Financial Disclosures (TCFD) and other guidelines. The report adopts the method of material issues analysis to determine the key content of the year and to select the ESG issues, which are both internally and externally concerned, for external disclosure. The main bases for determining material issues are as follows:

Company Dimension:

1. Discussion and approval of major ESG issues at the Company's Board and Management level;

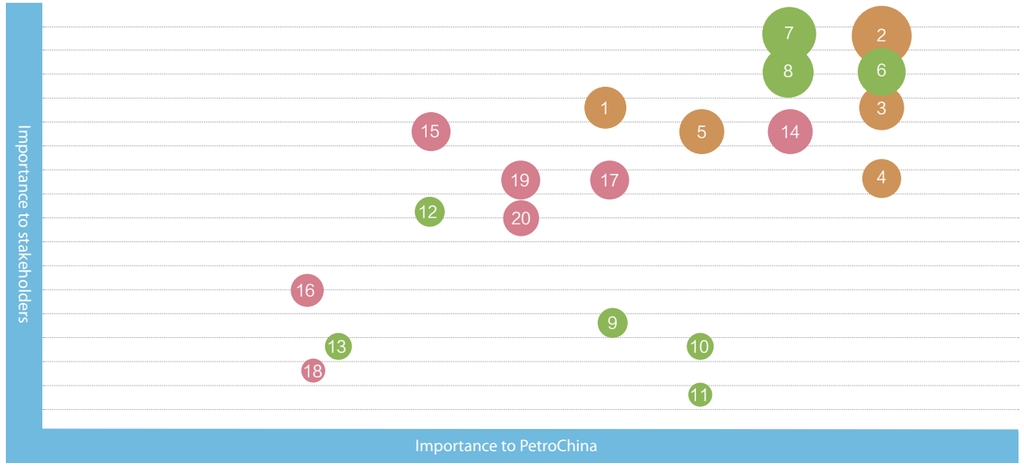
2. Awareness of the importance of ESG related issues from management departments.

Stakeholder Dimension:

1. External rules requirements and trend judgment of ESG related policy;

2. The attention and feedback of investors, customers, professional institutions and media and other stakeholders on the Company's ESG related matters.

Materiality Matrix



Governance

- 1 The Board of Directors
- 2 Compliant operation
- 3 Operating results
- 4 Technology innovation
- 5 Anti-corruption

Eenvironment

- 6 Energy transition
- 7 Climate change
- 8 Carbon emissions management
- 9 Waste
- 10 Water resource
- 11 Oil leakage
- 12 Biodiversity
- 13 Land resources

Society

- 14 Safety
- 15 Human rights
- 16 Service quality improvement
- 17 Health
- 18 Employee training
- 19 Compensation
- 20 Community contribution